MEN & THE UNIVERSE

Reflections of Ibn Al-Qayyem

By: Capt. Anas Abdul-Hameed Al-Qoz

Translated into English by Dr. Abdul-Latif Al-Khaiat

Preface

Praise be to Allah, the Compassionate, Who made known the Qur'an; Who created man, and taught him utterance; may peace and blessings be upon the noblest of prophets, Muhammad, who was sent to be a mercy for mankind.

The writings of Ibn Al-Qayyem, the celebrated scholar, may Allah give him mercy and admit him to His wide Garden, are indeed in no need of introduction. They are in fact a class apart. The present work is based on one of his books, "Miftah Dar Al-Sa'adah" (The Key to the House of Happiness.) I selected a section of the book from page 187 to 283 of volume one of the Arabic version, that discusses the following four topics:

1. Man, 2. the Universe, 3. Animals, and

4. Nature.

To smooth Ibn Al-Qayyem's writing for the modern reader, I supplemented it with modern material that would appeal to present-day readers. I did so because this is a time characterized by lack of motivation for knowledge, and the material things have so pervaded the minds that knowledge has receded in the same degree. Such a situation takes place at times of lack of faith and dryness of the religious spirit.

In the present work I have given titles to sections, and divided some sections into two, ending up with more than a hundred. The purpose of this, of course, has been to smooth the way for the reader so that he or she will get to the core of the book in the easiest way. I have also referred to modern scientific encyclopedias and to handbooks on medicine and biology to draw from them a lot of interesting and valuable information that is presented in an agreeable and easy way. In addition, I have chosen fitting illustrations and sketches that work for comprehending the notions under discussion, and accelerate the achievement of the desired aim set for the book. It is well-known that a picture fixes an idea in the mind of the ardent reader, especially when he or she uses the verses of the Qur'an and traditions of the Prophet ﷺ as a starting point for his or her reflections. Ibn Al-Qayyem cites a large number of such verses and traditions, which he uses creatively and efficiently.

I choose this particular book of Ibn Al- Qayyem's, "Miftah Dar Al-Sa'adah" (The Key to the House of Happiness), because he presents in it the art and technique of thinking and reflection, and propounds the ways that should be followed to secure the desired outcome of reflecting on Allah's signs in nature and in the human sphere.

It may be in order here to list some of the techniques of thinking that Imam Ibn-al Qayyem puts forth in his book:[1]

1. Observing, with an open heart, Allah Almighty's creations in both the universe in general and in the human sphere in particular, with a view to better appreciating Allah's glory and comprehending His great power and wisdom.

2. Reflecting on Allah's verses revealed to the Prophet ﷺ and His *shari'a,* to develop an awareness of this religion's superiority and to realize the amazing correspondence between revelation, *fitrah* (human innate

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[1] Hasan Al-Hajjajee, "Ibn Al-Qayyem's Educational Thought"

inclination to accept truth), and uncorrupted understanding.

3. Observing Allah's commandments and abiding by His system, which is conducive to preparing the heart to have the purity and clarity of vision concerning what is good for it. Abstaining from covetous looking, for instance, is of great benefit apart from being an act of obedience; since it protects the heart from corruption, makes it exult at the closeness to Allah, strengthens it; supplies it with a light that enables a believer to have perceptive vision, firmness and courage; protects him or her from the designs of Satan, so that a believer is dedicated to considering what is best for him or her. This is so because there is a close link between the heart and sight.

4. Guarding against the danger of sins and keeping away from them, since they distract the mind from proper functioning; it is a fact that the heart will be corrupted if burdened with many sins, and that leads in turn to the corruption of the other organs.

5. Guarding against blind imitation, since such a practice blurs thinking and dulls its activity. Instead, man is urged to focus on the teaching of the Scripture and the Prophet's traditions and to comply with their teachings as exemplified by the upright Caliphs (i.e. the first four Caliphs).

6. Protecting the body from abuse, preserving its comfort, and warding off all distracters.

The above techniques, if realized, will surely secure the attainment of the desired target. Some of the benefits of reflection are the following:

a.) It is the way to acquiring faith,

b.) It uncovers the truth about things and shows the distinction between right and wrong, c.) It wards off delusions and fantasies,

d.) It protects one from sins,

e.) It is the basis for all acts of obedience (to Allâh),

f.) It guides to acquainting oneself with Allah Almighty, His Oneness, His Attributes of Perfection; and directing all worship to Him alone, and

g.) It is the basis for purity of heart while reciting the Qur'an.[2]

One may add in support of the above, a tradition of Prophet Muhammad ﷺ which says:

«تَفَكَّرُوا فِي خَلْقِ اللهِ وَلَا تَفَكَّرُوا فِي اللهِ».

"Think of Allah's creation, not of Allah."[3] (As reported by Aboo Nu'aym in his: (Al-Hiliah, on the authority of Ibn Abbas.)

I pray to Allah that the following chapters are worth the reader's effort, that I have succeeded, in some degree, in clarifying the link between the 'ilm' (knowledge, vision) of the classical scholars, and knowledge, or empirical science of the present age, which refers to facts, experiment and concrete evidence.

At the same time, I pray to Allah Almighty that He guides us to what is true and upright, that He protects us from transgression, as He is Able to do anything. Praise be to Allah, Lord of the Worlds. Peace and blessing be upon Muhammad, upon his family and companions.

Anas Al-Qoz, captain

20 Safar, 1418 A.H.; 25 June, 1997

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[2] Hasan Al-Hajjajee, "Ibn Al-Qayyem's Educational Thought".

[3] Rated as a "good" tradition by Shaikh Naser Al-Deen Al-Albanee, in: Sahih Al-Jami'.

Al-Imam Ibn Al-Qayyem

His full name was Muhammad s/o Aboo Bakr s/o Ayyoub, Al-Zar'ee Al-Dimashqee, Shamsud-Deen Ibn Qayyem Al-Jawziyyah. He was born in Hawran, southeast of Damascus, in 691 A.H. (1219 CE) He was a courageous, widely-read scholar; he had an extensive knowledge of the various legal schools, and the schools of early Muslim scholars. He had such a strong passion for his teacher, Al-Imam Ibn Taymiyyah, that he rarely contradicted any of his views; he championed all his ideas, edited his books and publicized his scholarship.

When Al-Imam Ibh Taymiyyah was detained at Al-Qal'ah prison in Damascus, Ibn Al-Qayyem was detained with him. This detention occurred as a result of the conspiracies of Suffis and unorthodox groups. Later, he was subjected to further hardship in connection with Ibn Taymiyyah's legal opinions.

Al-Imam Adh-Dhahabee reports that Ibn Al-Qayyem was once imprisoned because he criticised making a journey with the purpose of visiting Prophet Ibraheem's tomb in Palestine.

Ibn Katheer, a great disciple of Ibn Al-Qayyem's, says of him: "He was constant in teaching and writing day and night; he prayed long and recited the Qur'an long; he was well-bred, courteous, not covetous or malicious. His prayer was very long, and his bowing and prostration in prayer were quite long."

After praying Al-Fajr prayer, he used to stay in his place remembering Allah until well after sunrise; he commented on this: "This is the start of my day. If I fail to sit, I lose my strength."

He used to say: "With patience and conviction one attains precedence in religion."

And he used to say: "A traveller (i.e. towards Allah) cannot do without perseverance to help him go ahead and upwards, and without knowledge to light his way and guide him."

He was fond of collecting books and reading them. His collection was incalculable; his library one of the biggest. After his death, his children sold his books for quite a long time, though keeping for themselves what they liked.

Some of his writings:

'Al-Huda' (Guidance), 'A'lam Al-Muaqqi'een' (Major Spokesmen), 'Bada'iu Al-Fawa'id' (Remarkable Fruits), 'Tareeq Al-Sa'adatayn'(The Way to Double Happiness), 'Sharh Manazil Al-Sa'ireen'(Exposition of the Stages of Traveller), 'Al-Qadaa wa Al-Qadar'(Destiny), 'Jala' Al-Afham' (Comprehension Made Simple), 'Masa'id AlShaitan'(The Snares of Satan), 'Miftah Dar Al Sa'adah'(The Key to the House of Happiness), 'Al-Rooh'(The Spirit), 'Hadee Al-Arwah'(The Guide of Spirits), 'Raf'u Al-Yadayn'(The Raising of Hands), 'Al-Sawa'iq Al-Mursalah 'Ala Al-Jahmiyah wa Al-Mu'attilah' (Thunderbolts Against Jahmites and Mu'tazilites). He also composed a poem of six thousand couplets, which he entitled 'Al-Kafiyah fi Al-Intisar Lil-Firqatin Najiyah'.

He died in Damascus in 751 A.H. (1350 AD) His funeral was attended by a great many people. May Allah give him peace and grant him his favour, Amen.

تأملات ابن القيّم
في الأنفس والآفاق

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بسم الله الرحمن الرحيم

In The Name of Allah, The Most
Beneficent, The Most Merciful

Chapter One

Man

﴿أَوَلَمْ يَرَ ٱلْإِنسَـٰنُ أَنَّا خَلَقْنَـٰهُ مِن نُّطْفَةٍ فَإِذَا هُوَ خَصِيمٌ
مُّبِينٌ﴾ [يس: ٧٧]

"Is man, then not aware that it is We who create him out of a mere drop of sperm– whereupon, lo! he showed him- self endowed with the power to think and to argue."

Al-Qur'an(36:77)

Ibn Al-Qayyem's propositions concerning man[1]

1. That he was first created from clay, and that his seed was made from a draught of despised fluid.

2. That he was created from a handful that Allah collected from all parts of the earth, so that it contains the good and the evil, the easy-going and the intolerant, the liberal and the miserly. It was Jibreel (Gabriel) who took this handful, then it was fermented until it turned to mud, then Allah fashioned man as He deemed fit. Then He breathed into him of His spirit, so that he was a human of flesh and blood, talking and reasoning...Later on Allah had His angels prostrate themselves before man, and taught him the names of everything.

3. That he was blessed with intellect, knowledge, understanding, eloquence and speech.

4. That he was privileged with the quality of modesty.

5. That he was privileged with two means of expression, the oral and the written.

6. That he was endowed by Allah with the power of acquiring knowledge by several means.

7. That he was distinguished with certain motives and impulses that serve to accomplish what is good for man.

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[1] Hasan Al-Hajjaji, "Ibn-al Qayyem's Educational Thought"

8. That man was distinguished with strength, desire and will.

9. That Allah's commandments are to be permanently observed until the day man meets His Lord.

10. That man was not created without purpose.

11. That man is distinguished from the other creatures in appearance and shape.

12. That man is an indivisible whole: composite of soul, mind and body.

Stages of the Creation of Man

Ibn Al-Qayyem writes the following:

By considering the verses in the Qur'an in which Almighty Allah has urged His servants to reflect upon Him, one will indeed be led to learn about Allah, about His Oneness and attributes of perfection; to learn about aspects of His might as attested by the absoluteness of His power, the infinite nature of His wisdom; by His mercy, generosity, clemency, kindness, justice, grace, anger, reward and punishment – it is through reflection on these facts that He willed His servants to know Him, and it is for this reason that He exhorted them to reflect upon His signs.

It is with this in mind that I here mention a number of signs as referred to in the Qur'an, so that they may be a reminder of further signs. One set of such signs are related to the creation of man. It will be noticed that in numerous places in the Qur'an we have been exhorted to reflect on the creation of man, as for example in the following verses:

﴿فَلْيَنظُرِ ٱلْإِنسَـٰنُ مِمَّ خُلِقَ﴾ [الطارق : ٥]

"Let man, then, observe from what he has been created." (86:5)

﴿وَفِىٓ أَنفُسِكُمْ ۚ أَفَلَا تُبْصِرُونَ﴾ [الذاريات : ٢١]

"Just as there are signs within your own selves: can you not, then, see?" (51: 21)

﴿يَـٰٓأَيُّهَا ٱلنَّاسُ إِن كُنتُمْ فِى رَيْبٍ مِّنَ ٱلْبَعْثِ فَإِنَّا خَلَقْنَـٰكُم مِّن تُرَابٍ ثُمَّ مِن نُّطْفَةٍ ثُمَّ
مِنْ عَلَقَةٍ ثُمَّ مِن مُّضْغَةٍ مُّخَلَّقَةٍ وَغَيْرِ مُخَلَّقَةٍ لِّنُبَيِّنَ لَكُمْ ۚ وَنُقِرُّ فِى ٱلْأَرْحَامِ مَا نَشَآءُ

إِلَىٰٓ أَجَلٍ مُّسَمًّى ثُمَّ نُخْرِجُكُمْ طِفْلًا ثُمَّ لِتَبْلُغُوٓا۟ أَشُدَّكُمْ ۖ وَمِنكُم مَّن يُتَوَفَّىٰ
وَمِنكُم مَّن يُرَدُّ إِلَىٰٓ أَرْذَلِ ٱلْعُمُرِ لِكَيْلَا يَعْلَمَ مِنۢ بَعْدِ عِلْمٍ شَيْـًٔا﴾ [الحج : ٥]

"O men! If you are in doubt as to the truth of resurrection, remember that, verily, We have created every one of you out of dust, then out of a drop of sperm, then out of a germ-cell, then out of an embryonic lump complete in itself and yet incomplete, so that We might make your origin clear unto you.

"And whatever We will to be born We cause to rest in the mothers' wombs for a term set by Us, and then We bring you forth as infants and allow you to live so that some of you might attain to maturity: for among you are such as are caused to die in childhood, just as many a one of you is reduced in old age to a most abject state, ceasing to know anything of what he once knew so well." (21: 5)

﴿أَيَحْسَبُ ٱلْإِنسَٰنُ أَن يُتْرَكَ سُدًى ○ أَلَمْ يَكُ نُطْفَةً مِّن مَّنِىٍّ يُمْنَىٰ ○ ثُمَّ كَانَ عَلَقَةً فَخَلَقَ فَسَوَّىٰ ○ فَجَعَلَ
مِنْهُ ٱلزَّوْجَيْنِ ٱلذَّكَرَ وَٱلْأُنثَىٰٓ ○ أَلَيْسَ ذَٰلِكَ بِقَٰدِرٍ عَلَىٰٓ أَن يُحْۦِىَ ٱلْمَوْتَىٰ﴾ [القيامة : ٣٦-٤٠]

"Does man, then, think that he is to be left to himself, to go about at will?

Was he not once a mere drop of sperm that had been spilt, and thereafter became a germ-cell – whereupon He created and formed it in accordance with what it was meant to be, and fashioned out of it the two sexes, the male and the female?

Is not He, then, able to bring the dead back to life?" (75: 36-40).

﴿أَلَمْ نَخْلُقكُّم مِّن مَّآءٍ مَّهِينٍ ○ فَجَعَلْنَٰهُ فِى قَرَارٍ مَّكِينٍ ○ إِلَىٰ قَدَرٍ مَّعْلُومٍ ○ فَقَدَرْنَا فَنِعْمَ
ٱلْقَٰدِرُونَ﴾ [المرسلات : ٢٠-٢٣]

"Did We not create you out of a humble fluid, which We then allowed to remain in the womb's firm keeping for a term pre-ordained?

Thus have We determined the nature of man's creation: and excellent indeed is Our power to determine what is to be!"(77: 20-23)

﴿أَوَلَمْ يَرَ ٱلْإِنسَٰنُ أَنَّا خَلَقْنَٰهُ مِن نُّطْفَةٍ فَإِذَا هُوَ خَصِيمٌ مُّبِينٌ﴾ [يس : ٧٧]

"Is man, then, not aware that it is We who create him out of a mere drop of sperm – whereupon, lo! he shows himself endowed with the power to think and to argue?" (36: 77)

﴿وَلَقَدْ خَلَقْنَا ٱلْإِنسَٰنَ مِن سُلَٰلَةٍ مِّن طِينٍ ○ ثُمَّ جَعَلْنَٰهُ نُطْفَةً فِى قَرَارٍ مَّكِينٍ ○ ثُمَّ
خَلَقْنَا ٱلنُّطْفَةَ عَلَقَةً فَخَلَقْنَا ٱلْعَلَقَةَ مُضْغَةً فَخَلَقْنَا ٱلْمُضْغَةَ عِظَٰمًا فَكَسَوْنَا
ٱلْعِظَٰمَ لَحْمًا ثُمَّ أَنشَأْنَٰهُ خَلْقًا ءَاخَرَ فَتَبَارَكَ ٱللَّهُ أَحْسَنُ ٱلْخَٰلِقِينَ﴾

[المؤمنون : ١٢-١٤]

"Now, indeed, We create man out of the essence of clay, and then We cause him to remain as a drop of sperm in the womb's firm keeping, and then We create out of the drop of sperm a germ-cell, and then We create out of the germ-cell an embryonic lump, and then We create within the embryonic lump bones, and then We clothe the bones with flesh – and then We bring all this into being as a new creation: hallowed, therefore, is Allâh, the best of artisans!" (23: 12-14)

In many places in the Qur'an a human is urged to reflect and ponder over the starting of his creation, the growth and the end.

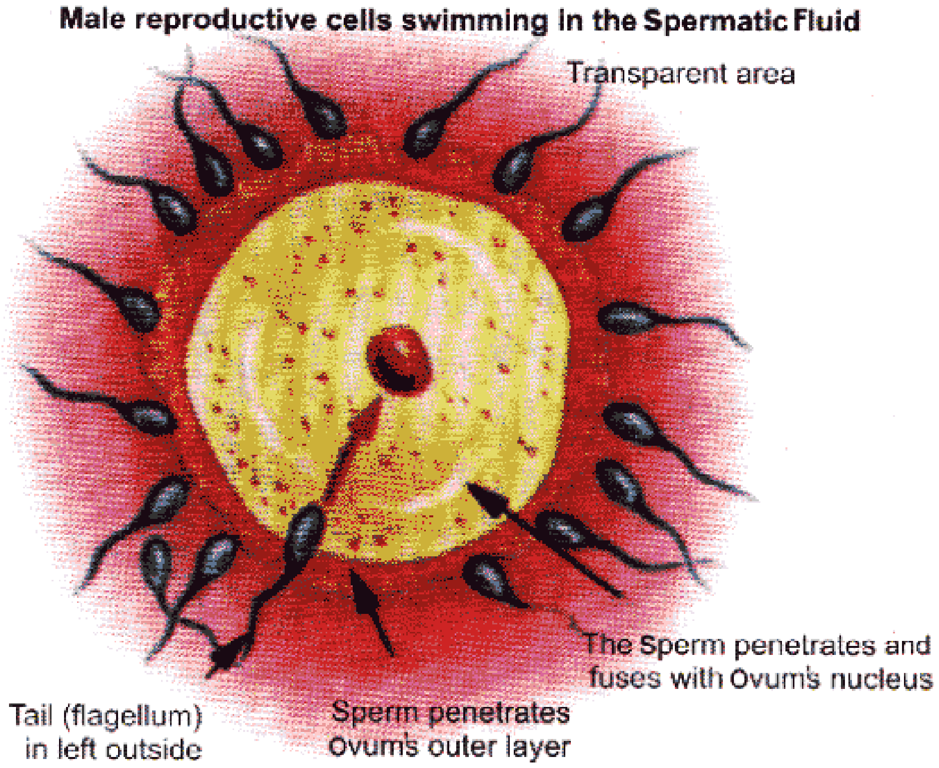
Male reproductive cells swimming in the Spermatic Fluid
Transparent area
The Sperm penetrates and fuses with Ovum's nucleus
Tail (flagellum) in left outside
Sperm penetrates ovum's outer layer

Figure "1"

1.The testes of the male are a kind of factory for sperm. There, sperm are produced on the inner surface of hollow tubes with a length of several kilometres. The cells mature there to be sperm, when each has a head 5 microns long and a tail 55 microns long. The sperm is considered to be a bearer of half a potential human. It may be noted that one ejaculation of semen from the male may carry 500 million sperm, or spermatozoa, although a human is created from just a single sperm. Even twins can be created from two sperm or spermatozoa that fertilize one egg. The sperm tubes in the testis are about 4000 in number (quoted from: *"The Creation of Man, Between Medicine and the Qur'an"*)*

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* The parts indented and in small script are modern material selected by Capt. Al-Qoz.

In his own creation and within himself he can find the most telling signs that point to his Creator and Originator. Man's own being is closest to him, and there he can find such wonders that point to the greatness of the Lord in a way that many lifetimes would not be sufficient to know more than a fragment of them. It is unfortunate that man should not reflect on that: if he did, the overwhelming nature of creation would deter him from being ungrateful to his Creator.

Let us read about this in the Qur'an:

﴿ قُتِلَ ٱلْإِنسَٰنُ مَآ أَكْفَرَهُۥ ○ مِنْ أَىِّ شَىْءٍ خَلَقَهُۥ ○ مِن نُّطْفَةٍ خَلَقَهُۥ فَقَدَّرَهُۥ ○ ثُمَّ ٱلسَّبِيلَ يَسَّرَهُۥ ○ ثُمَّ
أَمَاتَهُۥ فَأَقْبَرَهُۥ ○ ثُمَّ إِذَا شَآءَ أَنشَرَهُۥ ﴾ [عبس : ١٧-٢٢]

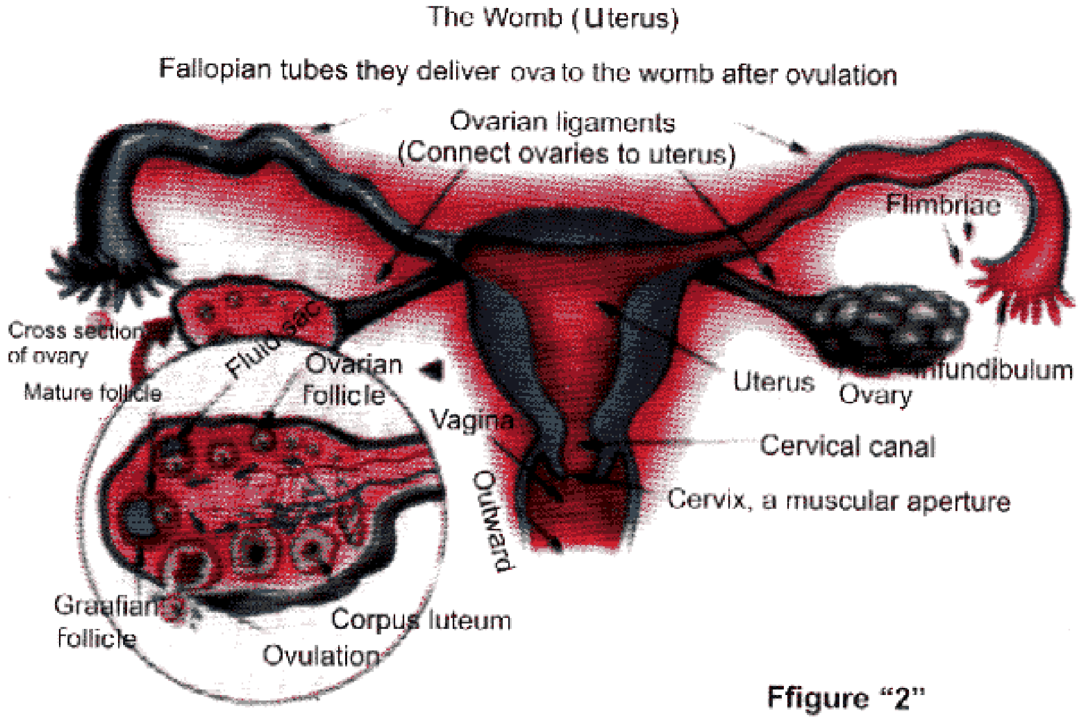
"Only too often man destroys himself: how stubbornly does he deny the truth! Does man ever consider out of what substance Allâh creates him? Out of a drop of sperm He creates him, and thereupon determines his nature, and then makes it easy for him to go through life; and in the end He causes him to die and brings him to the grave; and then, if it be His will, He shall raise him again to life." (80: 18-22)

When the Almighty repeatedly makes us recite these and similar verses so that we might learn about the drop of sperm, the clot, the lump of flesh and the dust, He does not merely want us to utter them, nor to be cognizant of them, but to understand a further meaning, which these things build up to, and which is the purport of the Qur'anic text.

The drop of sperm in the womb, the shaping of the clot, and the lump of flesh

Have a look now at the drop of sperm with an eye that has vision. It is no more than a drop of worthless, repulsive and dirty liquid. It is a drop that would, if left for an hour or so, go bad and reek. See now how the Lord of lords causes this drop to issue from between the loin of man and the pelvic arch of woman, obedient to His beckoning, responding to His will, docile and humble, progressing despite the raggedness and bumpiness of its paths, until He shepherds it to its destination and settling. See how the Almighty has brought together the male and the female and sown love in their hearts. See how with both desire and affection Allâh leads them as if on a journey to a meeting that is the cause of the creation and forming of the child. See how the liquids from male and female mingle against all odds, and consider how they run filing from organs and paths that lie far apart until they come together at the same spot; how they settle at a firm lodging (i.e. the womb), protected from infection by the outer air, from the cold weather of the world, and from exposure to a possible mishap or catastrophe that may smite them. Consider then how the Lord transformed this whitish cloudy droplet into a blackish-red clot; how He then transformed it into an embryonic lump, very unlike the previous clot in colour, quality, and shape; how He transformed this into unclothed bones, unlike the embryonic lump in shape, appearance, size, touch and colour.

> A woman's ovary contains eggs, each of which can potentially produce half a human. The number of eggs in the single ovary is 400,000, although only a single egg is released (ovulation) in each menstrual cycle (29 days). The release of eggs is normally carried out alternately by the two ovaries. The ovary is considered the primary sexual gland of the female, the counterpart of the male's testis.


The Womb (Uterus)
Fallopian tubes they deliver ova to the womb after ovulation
Ovarian ligaments
(Connect ovaries to uterus)
Fimbriae
Cross section of ovary
Fluid sac
Mature follicle
Ovarian
Follicle
Vagina
Uterus
Ovary
nfundibulum
Cervical canal
Outward
Cervix, a muscular aperture
Graafian
follicle
Corpus luteum
Ovulation

Ffigure "2"

The stage of the bones, flesh and nerves

Consider now how He caused those apparently homogenous and equal parts to specialize into nerves, bones, vessels, sinews, some hard, some soft, and some partly hard. See how God has tied them all very firmly in the most compact form; how the bones are covered with flesh that clothes them all and clings to them and protects them; how the bones in turn give the flesh the necessary strength and ability to move – the service is reciprocal: the bones give the flesh solidity, and the flesh gives the bones protection! See how the Lord formed the human in the best shape, how He placed the ears to hear and the eyes to see, the mouth, the nose, and all the rest of sense organs that serve as channels to the outer world; how He made the arms and the legs, gave them the needed power and extension, how He provided their ends with fingers and toes; how the fingers and toes are further divided into phalanges; how the inside of the body contains organs like the heart, the stomach, the liver, the spleen, the lungs, the womb, the bladder, the intestine, each performing its own task and its own function.

The forms of various bones and how they are joined

Consider now the exceeding wisdom embodied in the creation of bones to be a framework and bulwark for the body. You can see how the Lord has determined their different sizes and forms; some small, some big; some long, some short; some curved, some circular; some thin, some thick; some solid, some hollow. Consider how bones have been interlocked, some in the form of tendon and mortise, some just touching end to end. See how their forms are varied in a way that is adapted to their functions: the molars for instance are designed to grind, and so they have a flat surface; while the incisors are designed to cut, and so they have a sharp thin edge. Since man needs to move the whole of his body and alternate parts of it carry out whatever work he needs to accomplish, the bones have not been made as one cohesive mass; there are rather many bones with joints that link one to another in a way that facilitates movement. Each joint is of the size and form that serves the task it is meant to perform. Consider how all these joints and organs are firmly built, and how they are connected with tendons and ligaments that extend from one end of the bone and then reach to the next bone to support the first, and see how the bone has a protrusion that exactly fits a recess in the bone that links to it, so that when the human needs to move that particular part, the whole mechanism responds splendidly to his desire, which is only possible because of those joints.

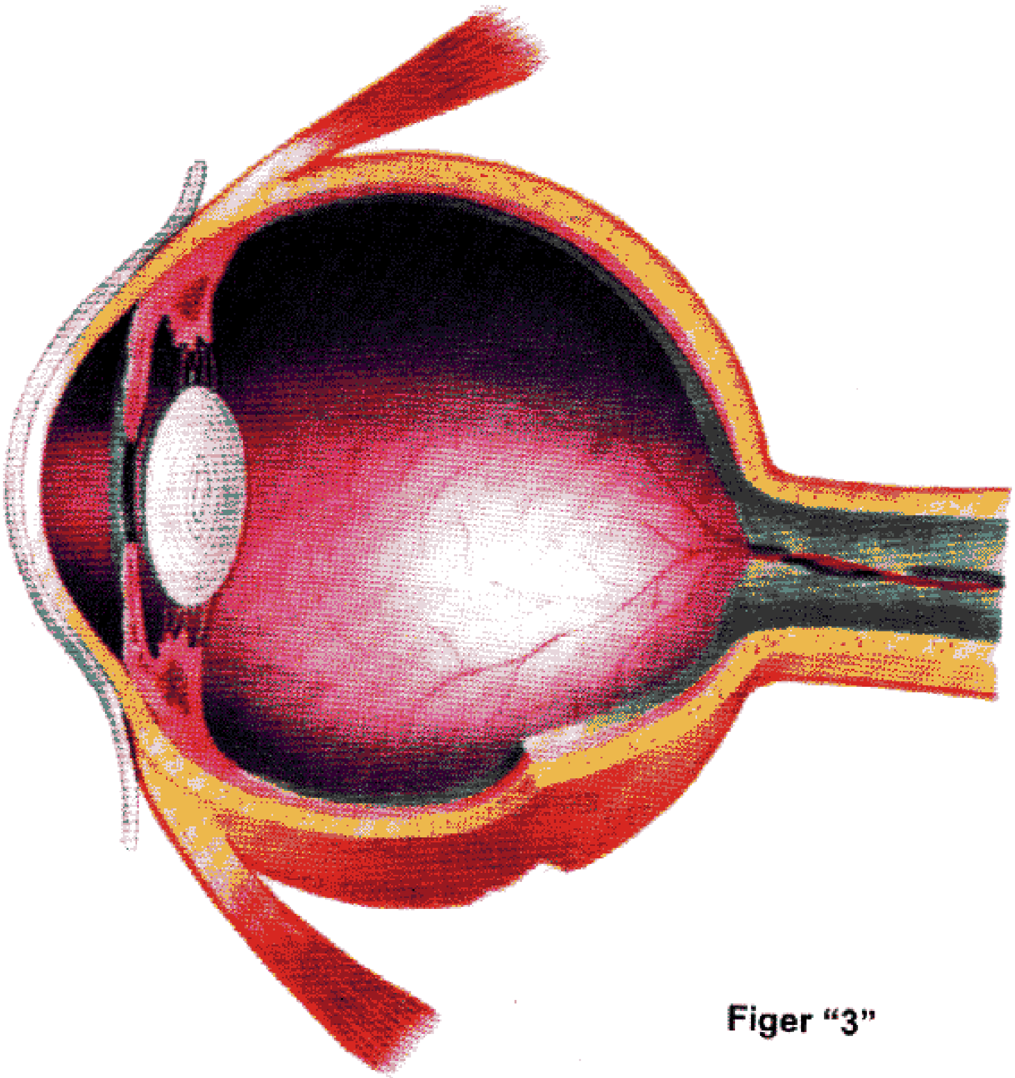
Each eye has about 140 receptors for light, called cones and rods. The number of cones in each eye is 7 million, and the rods are 130 million. The function of the cones is to receive intense light and colours, while the rods are for faint and moderate light. The cones and rods form the eye's retina. This retina is a half sphere, located at the back of the eye. If viewed through an ophthalmoscope, it seems very attractive. The retina is overlaid by two spheres, the inner is very rich in blood supply, and the outer is a protective shell called the sclera. The eye's movement is controlled by six muscles, and the coordination is controlled by the cerebrum, the cerebellum and the medulla. As a result of the activity of the retina, a total of half a million neural fibres transmit the image as colour vision.

It should be added that the retina itself is in ten layers, and that the layer of

cones and rods is just a single layer lying at the deepest level.

An eye afflicted with colour blindness may be partially or totally colour blind. An eye with partial colour blindness can distinguish only two of the three primary colours, with all the derivative colours. It may distinguish red and blue or green; it may distinguish red and green slightly. In the case of total colour blindness the eye does not distinguish any colours; all visible objects of various colours seem to it dark gray, exactly as one sees them in the dark.

Parts of the Eye



Figer "3"

The cornea is the front window of the eye; it is a thin film that lies in front of the iris and pupil.

The iris is the layer or tunic that gives the eye its colour, black, hazel, blue, or green. It is a muscular body that lies next to the cornea, and has a hole in its middle called the pupil.

The pupil is the hole that can widen or contract according to the intensity of light, enabled to do so by the muscles of the iris.

The lens is a transparent, elastic body, containing transparent liquid, and tied by muscles on all sides, which control the convexness of the lens, so as to form a clear reflection of the image on the retina.

The sclera is an outer layer that protects the eye (the 'white' of the eye).

The choroid is a layer that lies next to the sclera, and has blood vessels that nourish the eye.

The retina is the layer next to the choroid. It consists of ten layers that cannot be seen with the naked eye, one single layer of which performs the task of seeing, and consists of 140 million cells, which are of two sorts:

1. The rods which perceive normal light
2. The cones which perceive intense light

The head and its senses

Consider the head and the large number of bones that it contains. It is said to contain fifty-five bones, varied in shape, size and function. See how the Almighty has mounted it on the trunk, rather like a rider mounted on his animal. In its position above the torso Allah has disposed it in the right place to contain four of the five senses: hearing, vision, smell, taste, and touch; and the site of all perception.

The eyes

The sense of vision has been placed at the front of the head, so that it functions as a sentry, guard, and pilot for the body. He made each eye of seven layers, each layer with a particular quality, size and function. If any of these layers should be missing, or if it were moved away from its place or its shape, then the eye would stop seeing.

The Lord has supplied in the midst of these seven layers the pupil, a wondrous creation, equal to a lentil grain in size, but capable of engulfing the whole horizon from east to west, and extending its power of vision from the sky to the earth. It plays among the parts of the eye the role of the heart among organs, being their master, while all the layers, eyelids and eyelashes are its servants and guards. Glorified be Allah, the best of creators.

The eyebrows

See now the eyes. Observe how the Lord made their exquisite shape and their size, adorned them with the eyelids, to protect and shade them, and to receive harmful things, motes and dust in place of the eyes; how they ward off from them any excess of heat and cold that can cause them harm. Observe how He planted at the edge of the eyelids the eyelashes to adorn and beautify them, and they have other benefits apart from cosmetic purposes. And see how Allah provided them with such marvellous power of vision that spans all the space from sky to earth, that reaches all the stars and planets in the sky. It is such a wonderful thing that this tiny organ should have the capacity to accommodate an image of the skies with all their expanse and extent.

The ears

Allah created for man the sense of hearing. The ear is indeed a splendid creation! It performs what is required of it to perfection. The outer ear is made hollow, similar to a shell, so that it may collect sound, and then convey it to the outer ear canal. The outer ear is also important for feeling the movement of any insect so that a human may quickly remove it. It has convolutions, grooves and windings that enable it to catch incoming air and sound, and funnel it to the outer ear canal after softening it. Its particular shape helps to lengthen the way for any intruding insect, so that it may not reach the outer ear canal before the human has taken notice or woken and then checked its progress. There are also other benefits besides the ones we have mentioned.

One aspect of the wisdom of the Lord is observed in that the semi-liquid substance, the 'ear wax', overlaying the external ear canal is of such a bitter taste that an intruding creature is repelled by it, and thus prevented from intruding towards the inner ear – it rather does its best to retreat. In the same way, the eye's liquid is saline, which has a protective effect – the eye being jelly-like, and so unable to stand adverse circumstances: it would be gravely harmed had it not been for the saline liquid that protects and guards it. In contrast, the mouth's liquid is made to be sweet and pure, so that it is able to sense the taste of things with precision. Had it had a special flavour, it would have given it to things that enter the mouth. One can notice, for instance, that a sick person with a bitter mouth judges unbitter things as bitter. This was put in verse by a certain poet:

He whose mouth is sick and bitter
Will find bitter fresh and pure water!

The nose

The Almighty mounted the nose on the face, giving it a nice shape and size. He provided it with nostrils, with a barrier that separates them. He made it the site of the olfactory sense, so that the nose can distinguish all smells, fragrant or foul, healthy or obnoxious. It also inhales air that reaches the heart, refreshing it, and nourishing it. The Lord did not give the inside of the nose the windings and twists that he gave the inside of the ear, lest that should check odours and weaken them. The Almighty willed that the nose should be the receptor of waste material that collects in it from the brain, from where it is drained outside. He willed, in His infinite wisdom, that the nose should be narrower at the top than at the base, since this width at the bottom facilitates the collection of the waste material, so that it may be easily dismissed, and for the nose to inhale all its capacity of air, which ascends some distance before it flows to the heart in a way that does not harm or agitate it. The barrier between the two nostrils is placed by the mercy and wisdom of the Lord, since the nose is a pipe and conduit that receives waste material from the head, but is also the channel for the ascending air: this barrier in the middle protects the inhaled air from being contaminated by the impurity that descends from the head. It will be observed that as the liquid flows down, it occupies one of the nostrils in most cases, leaving the other for breathing; but if it flows through both nostrils, the liquid will be on one side, leaving enough space for the inhaled air. Besides, since the nose, unlike other sense organs like the ears or eyes, is single, wisdom dictates that it should be divided into two channels. Should any mishap hurt one of the two nostrils, or should a disease make it ineffective, the other unhurt nostril can carry on with the job, averting the dire consequences to the body of being without the vital part of the nose. To have two noses on the same face would have been disagreeable, and so the Lord of the Worlds, the best of artisans, disposed that it should be just one nose, with this dual structure that parallels the duality of the ears and eyes.

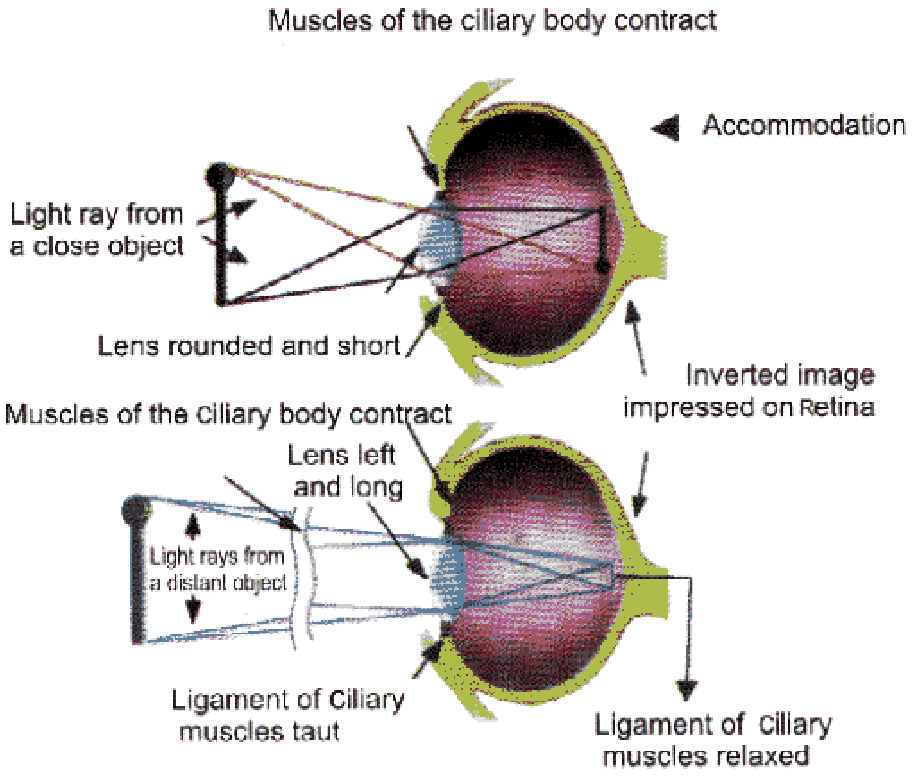

Muscles of the ciliary body contract
Accommodation
Light ray from
a close object
Lens rounded and short
Inverted image
impressed on Retina
Muscles of the ciliary body contract
Lens left
and long
Light rays from
a distant object
Ligament of Ciliary
muscles taut
Ligament of Ciliary
muscles relaxed

Figure "4"

Accommodation of the eye in response to the proximaty or distance of an object

The lens is a transparent body that, like any lens, refracts light-rays that pass through it, focusing them to one point, on the Retina in this case. The lens consists of a complex layer of tissues, held in place by the fibres connecting the Retina to the Ciliary body which controls the its shape, so that it can always focus light on the Retina, whatever the distance of the object. This process is called accommodation. The image is represented upside down on the Retina, but the brain soon corrects it.

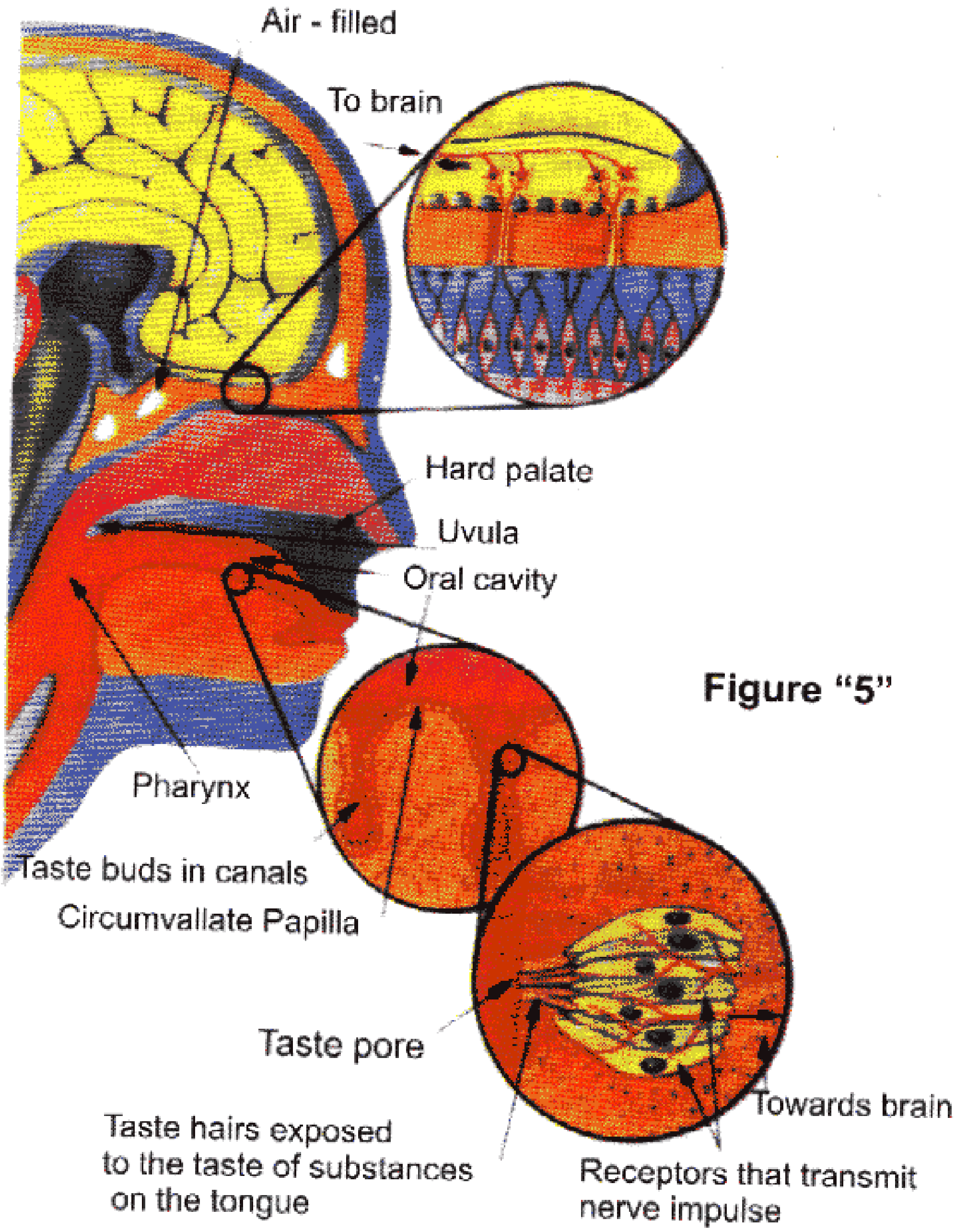

Air - filled
To brain
Hard palate
Uvula
Oral cavity
Pharynx
Taste buds in canals
Circumvallate Papilla
Taste pore
Taste hairs exposed to the taste of substances on the tongue
Towards brain
Receptors that transmit nerve impulse

Figure "5"

The nose and the sense of hearing

Odour enters the nostril with the inhaled air, and spreads in the nasal cavities, where it comes in contact with the hairlike endings (cilia) of the olfactory receptors, which synapse with the olfactory nerve cells, and these latter directly transmit the generated impulse to the brain. If the inhaled air contained some pollen from a flower or a rose, and the particles of pollen came in contact with some of the fibers of the sensory nerve cells, also linked up with the brain, you would sneeze.

Odour lasts for three minutes. After that, it either disappears or you become accustomed to it. The sense of smell is still a mystery to scientists. They say that when odour particles enter the nose, they are picked up by olfactory sensory cells, located high in the nasal cavity in an area called the olfactory epithelium. Fibres from these cells extend into the olfactory bulb, where the odour particles are dissolved and a reaction takes place with thousands of fibres of olfactory cells, specialized in chemical reactions, and then they are distributed to 6-8 nerve transmitters that convey the results of the reaction to the brain.

The basic odours are seven, and all the odours are blended from these. Glory be to Him who created, originated and shaped.

The mouth

The Almighty also provided man with the mouth, choosing for it the most suitable location, endowing it with abilities and instruments of taste and speech, and with tools of cutting and grinding that overwhelm an observing person. Look at the tongue, one of the signs that point to the Lord: it is an interpreter of the king of organs (the heart), that expresses what the heart wishes to convey or declare, in the same way that the Lord willed that the ear should be a messenger that keeps the heart briefed and informed. The ear is the courier that conveys the news to the king of organs, a counterpart to the tongue, a courier and messenger that transmits what the heart wishes to make known.

The Lord, in His infinite wisdom, disposed that this organ should be sheltered, preserved, and concealed; not visible or exposed like the ear, the eye, or the nose. Having the task of receiving messages from outside, those organs need to be in touch with the outer world, while the tongue is there to express messages to the world, not to receive them, and so it needs to be preserved and guarded. Besides, as the tongue is apart from the heart, the noblest of organs, and as it is a kind of interpreter and vizier of the heart, it needs to have a pavilion that conceals it and protects it. It is protected in that pavilion in a way similar to the protection of the heart in the chest. The tongue is also one of the most tender and wet organs, and it can perform only with that wetness surrounding it, and so, if it were exposed, it would be harmed by heat, dryness and rigidity that would inhibit its functions. There are other reasons besides these for the extra protection of the tongue.

The teeth

The Lord also adorned the mouth with teeth, a handsome and agreeable sight to look at, a vital contributor to human survival and the tool of nourishment. Some of the teeth are tools of grinding, and some are tools of cutting. The Almighty made firm their roots, and gave sharpness to their edges. He gave them a white colour, and arranged them in two straight well-arrayed rows, like a necklace of pearls in their whiteness, purity and splendour. Curved over the teeth are two walls, the lips, which have a number of benefits and functions. The Lord has willed that the lips have an agreeable colour and shape, a nice position and appearance. He destined them to be a keeper of the mouth, a final and finishing station for the uttering of sounds, in the same way that the soft palate is the starting station and the tongue is the middle station. The tongue is the most active organ in the production of letters, since it functions as the mediator. In His infinite wisdom, Allah disposed that the lips are just flesh, without bone or nerves, so that a human may use them for sipping drinks, and have no difficulty in opening and closing them. He confined movement to the lower jaw which, as the lighter jaw, is more adapted to movement, and also because the upper contains precious organs that should not run the risk of movement. He destined humans' throats to be of infinite variety in narrowness and width, coarseness and smoothness, softness and hardness, and in length and shortness. In consequence of this, there is an endless variety of voices, in such a way that very rarely do any two voices resemble each other. An offshoot of this is that we believe a blind person's witness is legal, since he can distinguish people from their voices in the same way that a sighted person can distinguish them from their looks: the possibility of confusing sounds is similar to the confusion of looks.

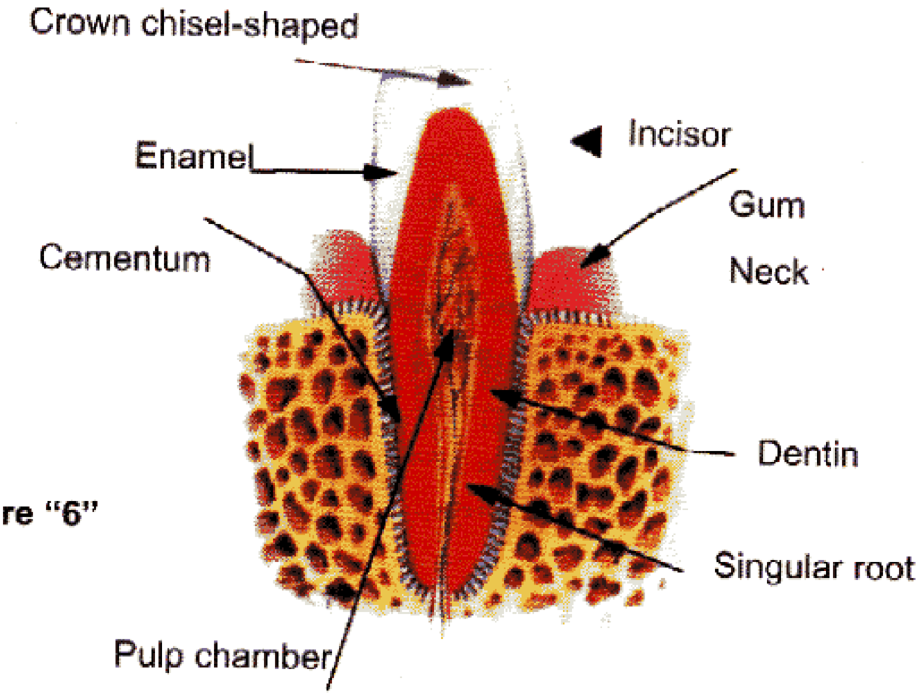

Crown chisel-shaped
Enamel
Incisor
Gum
Neck
Cementum
Dentin
Singular root
Pulp chamber

Figure "6"

A sketch of teeth, set in the upper and lower jaw-bones, each identical pair opposite to each other

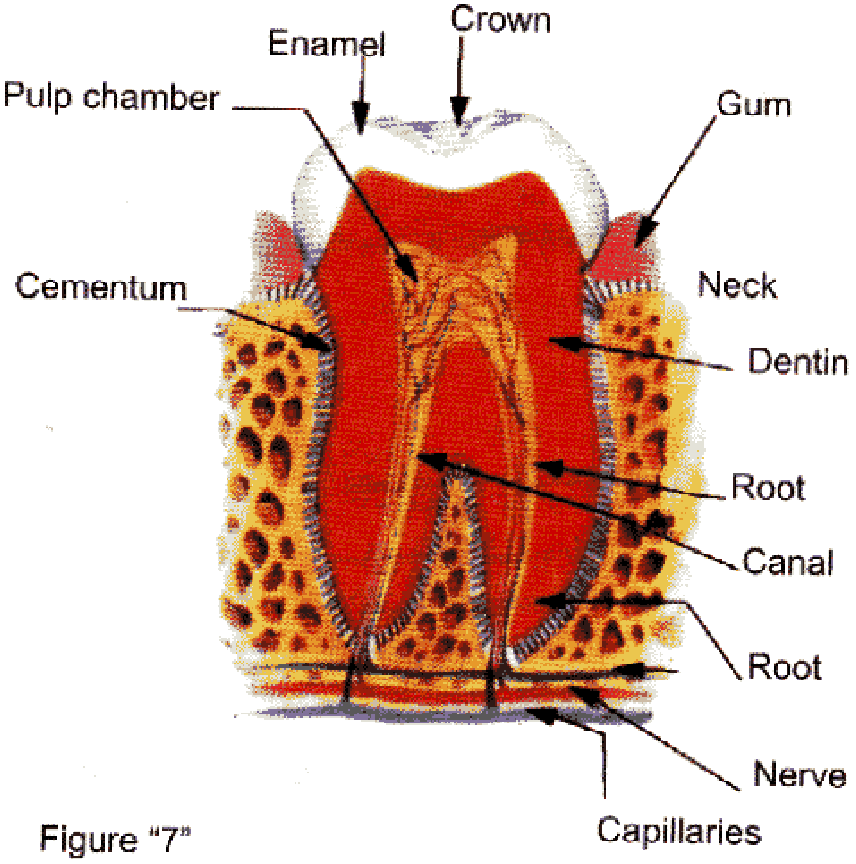

Crown
Enamel
Pulp chamber
Gum
Cementum
Neck
Dentin
Root
Canal
Root
Nerve
Capillaries

Figure "7"

Section of tooth

The hair

The Almighty Lord adorned the head with the hair, making of it a cover that is essential for the head; and adorned the face with hair at various locations and of various shapes: there are the brows, which protect the eyes from what might descend on them from the skin of the head; and He made them curved, agreeable to see. The eyelids are adorned with eyelashes. A male's face is further adorned with the beard, which gives integrity, dignity and venerability to the man; and his lips are also adorned with the moustache above and the beard below.

The hands, fingers and finger nails

The hands are another wonderful creation of the Lord's. They are a human's main instrument, weapon, and the means for earning a living. The arms are long enough to reach all parts of the body, and the palm is wide enough to fold and spread. It is provided with five fingers, and each finger is further divided into three phalanges, except the thumb which has two. The four fingers are placed in such a way that the thumb faces them, and so it can meet any of the fingers.[1] It does that splendidly well. The hand can,

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[1] The Almighty says in the Qur'an:

﴿أَيَحْسَبُ ٱلْإِنسَٰنُ أَلَّن نَّجْمَعَ عِظَامَهُۥ ۝ بَلَىٰ قَٰدِرِينَ عَلَىٰٓ أَن نُّسَوِّىَ بَنَانَهُۥ﴾ [القيامة : ٣، ٤]

"Thinketh man that We shall not assemble his bones? Yea, verily. Yea, We are able to restore his very fingers!" (75:3,4) No two fingerprints of any two humans are identical in the whole world, or over the span of history. No two people in all the billions of humans now on the surface of the earth have identical fingerprints, and none will have in all the future of mankind. There is a law of biology, which is that nature, a creation of Allah, never repeats itself in the sphere of plant, animal, or man. The secret of fingerprints is accounted for by a hundred features of the fingerprints, by which their details are so numerous that it would be quite overwhelming to imagine the possibility of two prints being identical, whether between two persons or between two of any of the ten fingers of the same person. Not even twins have identical because of this fact, be efficient in spreading and tightening, and in doing what it has to do. No other position of the fingers can be imagined to be as good, not if all mankind from the earliest times until now met to think of an alternative position. Glorified be He Who destined the hand to be in this form: He could as easily have chosen to make it like one plate, and a human would in that case not been able to carry out many tasks and actions and exact jobs like writing. He spreads his hand, and it will be a plate on which he puts things, and he closes it, over a club or another tool of strength; or he half-spreads it, and then he will have a scoop, which can be filled with a variety of things.

Then on the edge of the fingers, the Lord fixed the nails, an adornment, support and protection. They are essential for handling fine things that the fingers alone cannot pick up. In other animals the nails are claws that are the animal's weapon and the means for catching its food. Finger nails are very useful for scratching the body. So you see how the nail, which is the least worthy part of the human body, can be badly missed if one loses it. If one needs to scratch some part of the body where it itches,

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fingerprints. This remarkable fact has made all countries of the world adopt fingerprints as the subject of a science that provides scientific proof in determining the identity of a person, since it was felt certain, since the beginning of this century, that fingerprints are distinctive marks of individuals. It might be sufficient to mention that the fingerprints of an Egyptian mummy were taken, and were found to be as good as a contemporary fingerprint, and that the fingerprints of a corpse found in Denmark were dated by specialists as being more than 2000 years old. All of this reminds us of the miraculous information in the following Qur'anic verse:

﴿ بَلَىٰ قَٰدِرِينَ عَلَىٰٓ أَن نُّسَوِّىَ بَنَانَهُۥ ﴾

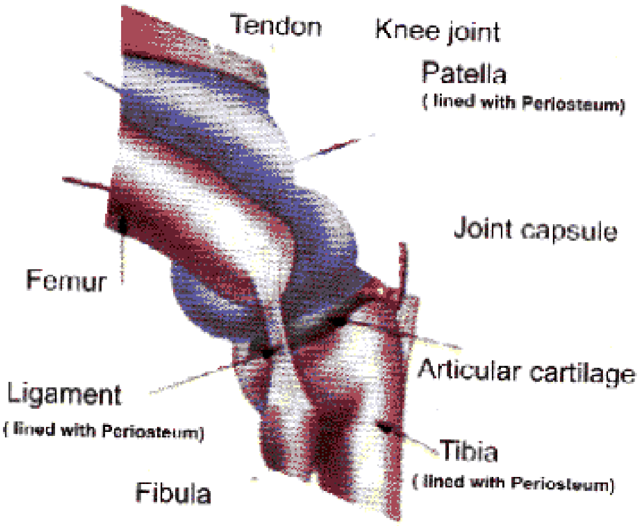
"Yea, verily We are able to restore his very fingers!"(75: 4) one cannot find a substitute for the nails. It is a blessing that a human can reach the spot where it itches without difficulty; even in sleep or absent-mindedness one does not need to be aware of where one needs to scratch. If one needed another to scratch for him, that other would be sure to waste time and cause trouble before finding the relevant spot.

The structure of bones

Consider now the great wisdom embodied in the bones. The bones of the lower half of the body have been made sturdy and thick, since they play the part of a foundation, while the bones of the upper part are less thick and bulky, since they are not required to carry the weight. Consider then how the neck has been made a vehicle for the head to mount on, how the Lord has destined that it should have seven vertebrae, hollow and circular in the middle, how He laid them one on the other. See how each vertebra is made in perfect structure and careful position, so that they all make a compact whole like one body. See how the neck has been mounted on both back and chest, and the back has been constructed from the top to the sacrum from twenty-four linked vertebrae, all interlinked to each other, forming a meeting point for the ribs, holding them lest they become loose and get disconnected. Observe how these bones are all connected, the bones of the back are connected to the chest's, the shoulder's to the upper arms', the upper arms' to the forearms', the forearms' to the hands' and so on to the fingers'. See how the broad bones, like the back's and the head's, are sheathed in a properly shaped layer of flesh; how the thin bones, like those of the fingers and toes, with a layer of flesh that is designed to fit them perfectly; and so are the medium bones, like the upper arms' and the forearms', clothed with flesh that suits them. The total number of bones is three hundred and sixty, two hundred and forty-eight with cartilage, and the rest are small bones that are surrounded with cartilage. The number is definite: if an extra bone is seen it needs to be extracted, and if one bone is missing, an operation to replace it is needed. When a physician observes the bones and their structure he does so to be better equipped for splinting them if necessary. A thinking person, on the other hand, considers them to find in them an embodiment of the greatness of their Maker and Creator, to better appreciate His wisdom, knowledge and gentleness. Great is the difference between the two reflections!

The Ligament

Then, verily He (Allah) fastened these limbs and parts together with fixtures (ligaments) and thereby strengthened them. And He made these connecting pieces like chords to hold these parts together and preserve them. He made them numerous so that their number reaches a total of five hundred and twenty-nine ligaments. They all differ in their tightness, precision, length, shortness, placement and direction, according to their different positioning and locations within the body. From these, He (Allah) made twenty-four ligaments that are tools for moving the eye, opening and closing it and its vision. If a single ligament of these twenty-four were to be absent, the eye would not be able to function properly. Similar is the case of every part of those that are attached by ligaments. These ligaments are like instruments, which are used by these parts to move, perform and carry out actions. All of this is from the creation of the Most Wise Lord and the ordainment of the Most Mighty, the All Knowing, that takes place in a drop of repulsive fluid (i.e., semen). Therefore, woe unto those who deny (faith) and far removed are the rejecters.


Tendon
Knee joint
Patella
(lined with Periosteum)
Joint capsule
Femur
Articular cartilage
Ligament
(lined with Periosteum)
Tibia
(lined with Periosteum)
Fibula

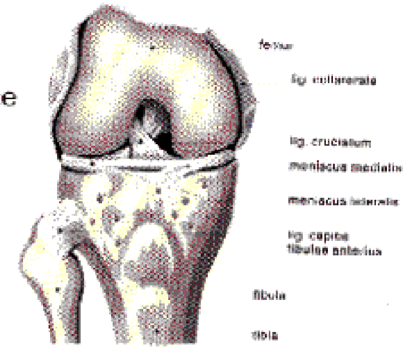

femur
lig. collaterale
lig. cruciatum
meniscus medialis
meniscus lateralis
lig. capitis
fibulae anterius
fibula
tibia

Figure "8"

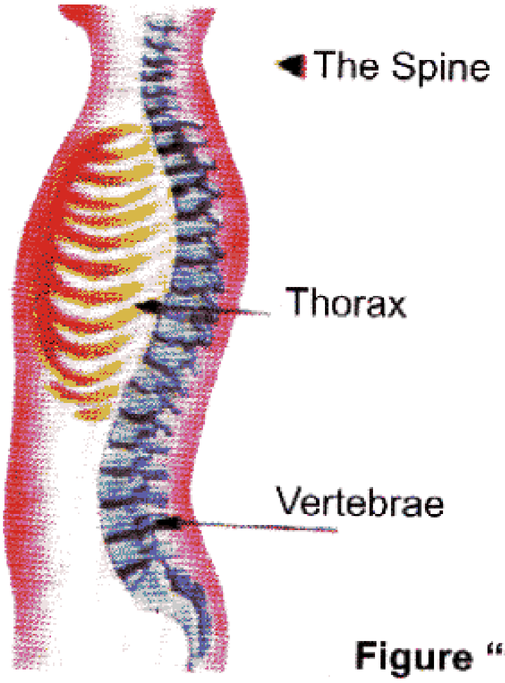


Figure "9"

The Messenger, Muhammad (ﷺ) said:

«إِنَّ فِي الإِنْسَانِ عَظْمًا لاَ تَأْكُلُهُ الأَرْضُ أَبَدًا، فِيهِ يُرَكَّبُ يَوْمَ القِيَامَةِ».
قَالُوا: أَيُّ عَظْمٍ يَارَسُولَ اللهِ؟ قَالَ: «عَجْبُ الذَّنَبِ».

"Verily, in the human being there is a bone that the earth never devours. From this bone he (man) will be recreated on the Day of Judgement." They (the Companions) said: "Which bone is it O Messenger of Allah?" He replied: "The tailbone." (Reported by Al-Bukhari)

"Verily, the shin bone can withstand pressure of up to half a ton." (Quoted from "Scientific Discovery")

The Skeleton

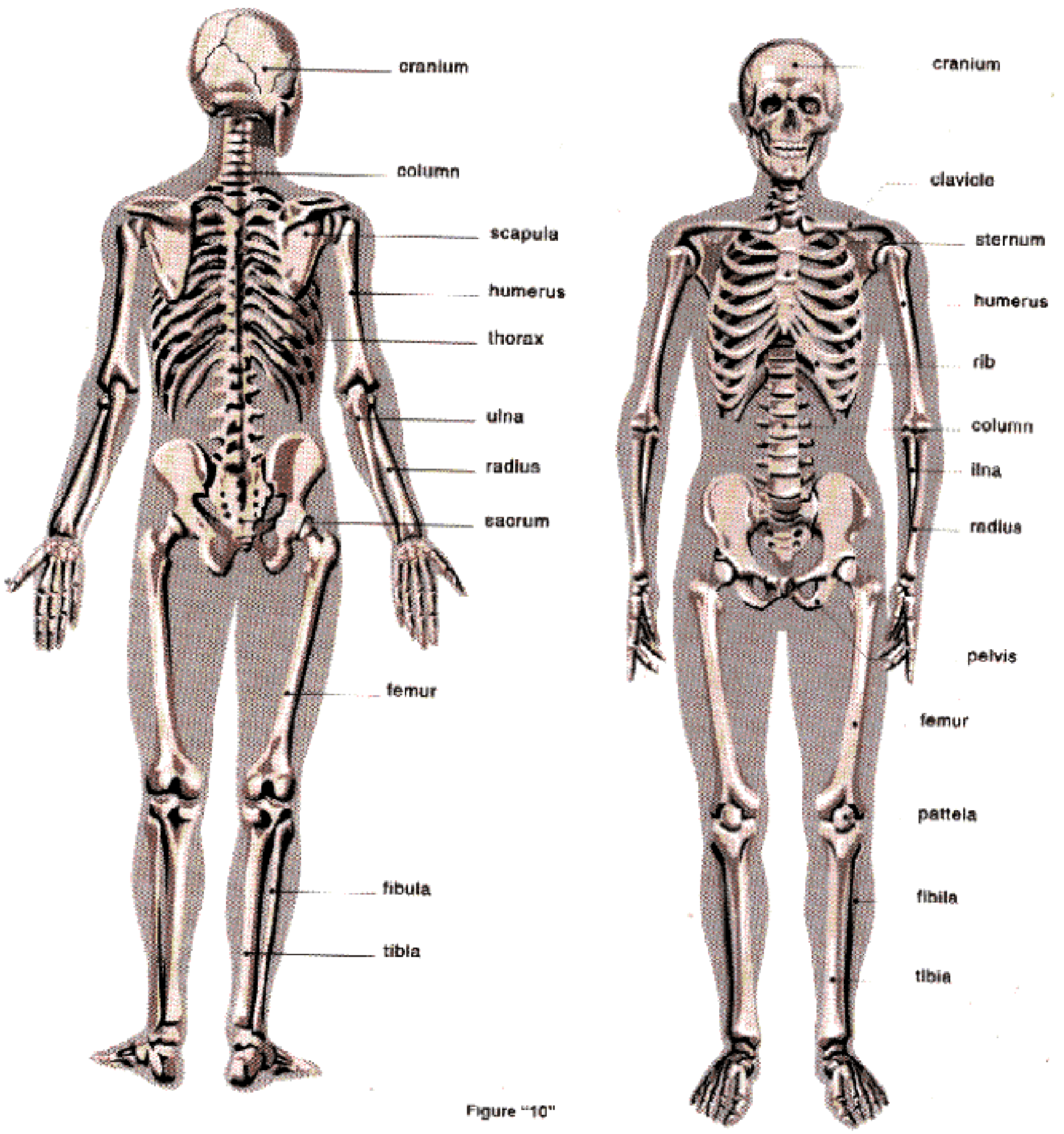

cranium
column
scapula
humerus
thorax
ulna
radius
sacrum
femur
fibula
tibia
cranium
clavicle
sternum
humerus
rib
column
ilna
radius
pelvis
femur
pattela
fibila
tibia

Figure "10"

The ligaments, muscles and tendons have numerous different forms. The human body contains more than six hundred muscles and more than two hundred bones. A medium sized muscle has a mass that is made up of ten million muscle fibers. The thighbone (femur) contains more than thirty thousand special calcium cells.

Likewise, the collective work of the muscles in a day is equivalent to the work of carrying twenty tons.

Allah says:

﴿ وَجَعَلۡنَا لَهُمۡ سَمۡعٗا وَأَبۡصَٰرٗا وَأَفۡـِٔدَةٗ ﴾ [الأحقاف : ٢٦]

"And We made for them the (faculties of) hearing (ears), seeing (eyes), and hearts." (46:26)

Allah also says:

﴿ صُمُّۢ بُكۡمٌ عُمۡيٞ فَهُمۡ لَا يَرۡجِعُونَ ﴾ [البقرة : ١٨]

"They are deaf, dumb, and blind, so they return not (to the Right Path)." (2:18)

Verily, the discussion of this has already preceded. Likewise, Allah combines between the heart and the sight, like in His statement:

﴿ وَنُقَلِّبُ أَفۡـِٔدَتَهُمۡ وَأَبۡصَٰرَهُمۡ ﴾ [الأنعام : ١١٠]

"And We shall turn their hearts and their eyes." (6:110)

Also, there is His statement concerning the truthfulness of His Messenger, Muhammad (ﷺ):

﴿ مَا كَذَبَ ٱلۡفُؤَادُ مَا رَأَىٰٓ ﴾ [النجم : ١١]

"The (Prophet's) heart lied not in what he (Muhammad) saw." (53:11)

Then, Allah went on to say:

﴿ مَا زَاغَ ٱلْبَصَرُ وَمَا طَغَىٰ ﴾ [النجم: ١٧]

"The sight (of Prophet Muhammad) turned not aside (right or left), nor it transgressed beyond the limit." (53:17)

Similar is the case of the ear, for it is its (the heart's) messenger that brings (information) to it. Likewise is the tongue, for it is its interpreter (to express itself). In general, all of the bodily parts are its (the heart's) servants and its soldiers.

The Prophet (ﷺ) said:

«أَلاَ إِنَّ فِي الجَسَدِ مُضْغَةً إِذَا صَلَحَتْ صَلَحَ لَهَا سَائِرُ الجَسَدِ، وَإِذَا فَسَدَتْ فَسَدَ لَهَا سَائِرُ الْجَسَدِ أَلاَ وَهِيَ الْقَلْبُ».

"Verily, there is in the body a piece of flesh, that if it is correct, the rest of the body will be correct due to it, and if it is corrupt, then the rest of the body will be corrupt due to it. Verily, it is the heart." (Reported by Al-Bukhari and Muslim) And Abu Hurairah said: "The heart is a king and the body parts are its soldiers. So if the king does good, then the soldiers will do good. And if the king does wickedness, then the soldiers will do wickedness." The lungs have been made as the ventilator for it (the heart) and they constantly blow on it (to keep it cool). This is because the heart is the hottest of the body parts. Rather, it is a spring of heat.

The brain and its relation to the heart

The brain or the cerebrum has been made cool. There has been much debate about the purpose behind this fact. Some have said: The brain is made to be cool to lower the temperature of the heart, so that it balances its temperature and makes it the proper temperature. Some have denied this view with the following argument: If the brain were meant to perform this function, it would have been placed to curve around the heart, in the same way as the lungs, or to be adjacent to it, so that it lowers its temperature. The first group retorted: The brain is far from the heart, but that does not hamper the role mentioned by us. If it were close to the heart, the latter's heat would have been transferred to it. The distance bars each from spoiling the part the other plays, and so they balance each other. This is not the same for the lung, since this last is a tool for relieving the heart, not for lowering its temperature. A third group has chosen a middle ground, saying: The brain is really warm, or rather lukewarm; and it is cooling in quality, since it is the site of thinking, and thinking requires a place that is calm and stable, free from waste material and disturbance, away from bustle and turbulence, which is necessary to secure efficiency of thought, recall and right deduction. It functions optimally when the body is calm, relaxed from activity, undisturbed by distractions and irritation. All the above conditions are not realized for the heart; it is the brain which is balanced in all these respects. It will be noticed that the brain's activity is best displayed at night and in isolation, and that it is spoiled by the burning heat of anger, lust, or overwhelming care, by fatigue and the violent movements of physical or psychological powers.

> The joints, muscles, and tendons have different shapes. The human body has more than 600 muscles and more than 200 bones. The average muscle consists of more than 10 million muscular fibres, and the thigh bone contains more than 30 thousand special calcium rods.
>
> The collective action of muscles during one day is equal to a load of 20 tons.

Question:Does the action of the senses and thinking start in the brain or the heart?

In answer to the above question some have said it begins in the heart, that it is linked to it, and that there exist between the heart and the senses channels and paths. They add that each one of the sense organs is linked to the heart with nerves and other means, that these nerves set out from the heart to reach each of these sites of sense.

The above group adds: When the eye sees an object, it will transmit what it has seen to the heart, via the channels that connect it to the heart. In the same way, when the ear receives a sound, it will convey it to the heart, and that is so with all the senses.

The same group then made this inquiry: It may be asked how it is possible that one particular organ should be a reservoir of all those mixed sensations, receiving messages from the various senses, while the structure of those sense organs is dissimilar, and the kind of energy it deals with is unlike that of any other sense? Their answer to the inquiry is that all the vessels in the body reach the heart, directly or via other vessels. There is no organ or vessel but it is linked to the heart at close quarters or far. And they added: These vessels and canals carry to each organ what fits it and what is adapted to it: to the eyes there goes energy that provides it with good sight, to the ear what secures hearing, to the flesh what gives it the

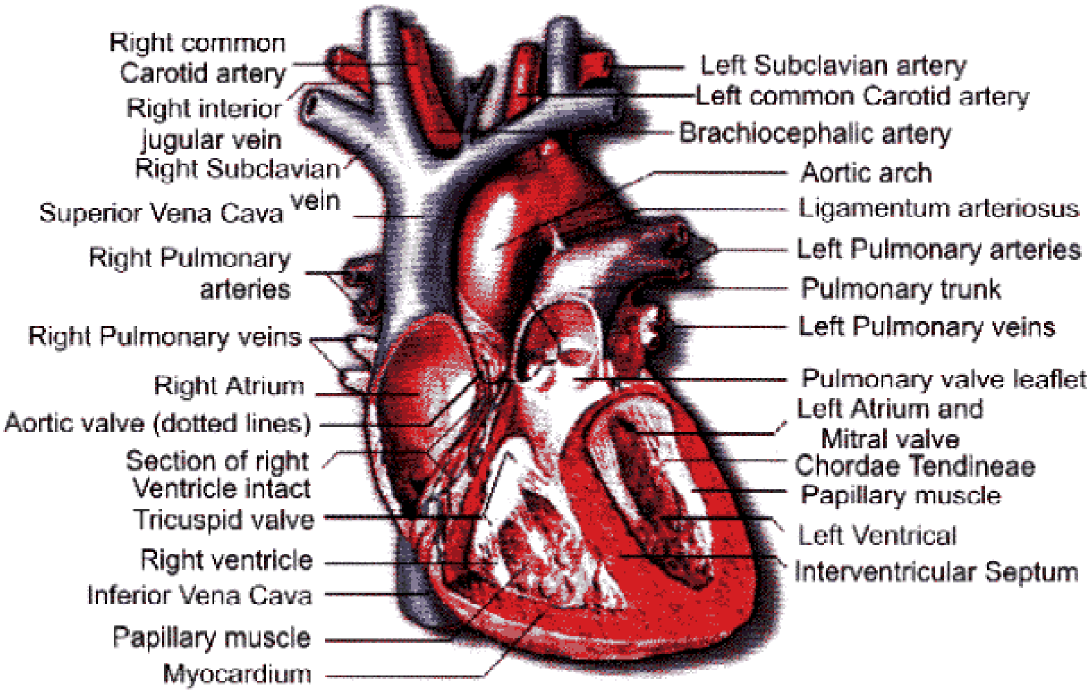

Right common Carotid artery
Right interior jugular vein
Right Subclavian vein
Superior Vena Cava
Right Pulmonary arteries
Right Pulmonary veins
Right Atrium
Aortic valve (dotted lines)
Section of right Ventricle intact
Tricuspid valve
Right ventricle
Inferior Vena Cava
Papillary muscle
Myocardium
Left Subclavian artery
Left common Carotid artery
Brachiocephalic artery
Aortic arch
Ligamentum arteriosus
Left Pulmonary arteries
Pulmonary trunk
Left Pulmonary veins
Pulmonary valve leaflet
Left Atrium and Mitral valve
Chordae Tendineae
Papillary muscle
Left Ventrical
Interventricular Septum

Figure "11"

sense of touch, to the nose what enables it to smell, to the tongue what makes it taste things, and to each organ what gives it its particular function and maintains it. It is the heart, then, that caters for all these organs, senses, and powers. It is right then to deduce that the heart is the first organ to form. This group adds that they do not doubt that the intellectual function emanates from the heart.

> The heart has a weight of approximately 312 grams; its size is nearly that of the clenched fist. The pulse of a man's heart is approximately 60-80 beats/minute, about 40 million beats per year. In every beat, about one quarter pound of blood enters the heart, and it pumps 2200 gallons of blood every day, about 56 million gallons during a lifetime. Can you think of another machine that can perform such a stupendous amount of work for such a prolonged period, without need of maintenance?
>
> * If the heart were employed as a lifting machine, it would lift a weight of two pounds two feet high with the same effort that it uses to pulsate once.
>
> The blood that is pumped by the heart of a healthy man during strenuous exercise is about 20 litres per minute, and it takes one wave of blood approximately 1.5 seconds to pass through the heart, and the passage of the blood from the heart to the lungs and its return to the heart (the smaller cycle) takes six seconds.
>
> * The heart pumps 8000 litres of blood every day in the whole blood circulation, which extends to about 150 kilometres throughout the tissues of the body, transferring blood loaded with nutrients and oxygen. To appreciate the vitality of the blood supply, it is enough to note that the brain will be irreversibly destroyed by a halt of oxygen supply for only five minutes.

Another group, though, denies this last proposition and holds that the intellectual function is in the head. The truth, however, seems to be that the intellectual function starts at the heart, then finds its elaboration and fruition in the head. One may refer to the Qur'an to support this view, as the following verse illustrates:

﴿ أَفَلَمْ يَسِيرُواْ فِى ٱلْأَرْضِ فَتَكُونَ لَهُمْ قُلُوبٌ يَعْقِلُونَ بِهَآ ﴾ [الحج : ٤٦]

"Have they, then, never journeyed about the earth, letting their hearts gain wisdom?" (22: 46); and in another verse we read:

﴿ إِنَّ فِي ذَٰلِكَ لَذِكْرَىٰ لِمَن كَانَ لَهُۥ قَلْبٌ ﴾ [ق : ٣٧]

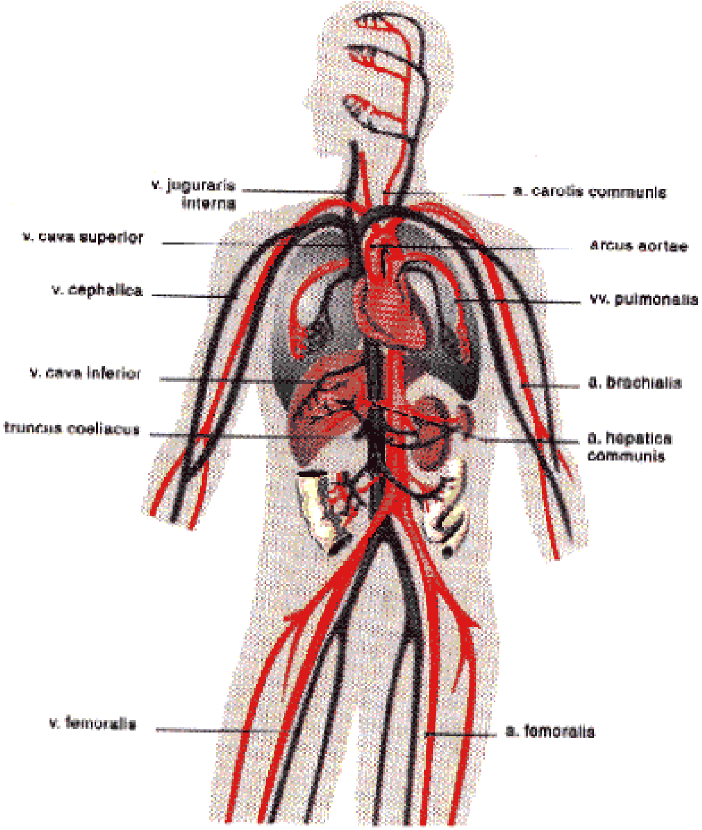
"In this, behold, there is indeed a reminder for everyone whose heart is wide-awake." (50:37)

It should be added here that the heart described in the verses is not that muscular organ which animals possess as well as humans; it is rather one particular function of it: reflection and contemplation. Another group, though, would not accept this representation – they assert that all the senses are linked to the brain. They deny that there are nerves or vessels that connect the heart and the eye, the ear and the nose. They add that such a claim defies the concrete reality of creatures. The truth, we believe, lies between the two groups: that the heart provides energy to the senses, a non-physical energy that does not require any particular paths and nerves to be its carrier. What is required for this energy to be transmitted is that the senses and organs accept it and are receptive to it, and the heart supplies that energy without any need for paths and nerves. This view avoids the confusion that has arisen in this area and the many arguments and counter-arguments. But Allâh knows best, and I take refuge in Him to lead us to the truth. What I have been trying to do is to draw attention to just a few aspects of the wisdom embodied in the creation of man. But the full truth is manifold, more than one might imagine or think.[1] The little that we have presented here, however, is enough to awaken the mind to the great truth that lies beyond.

---

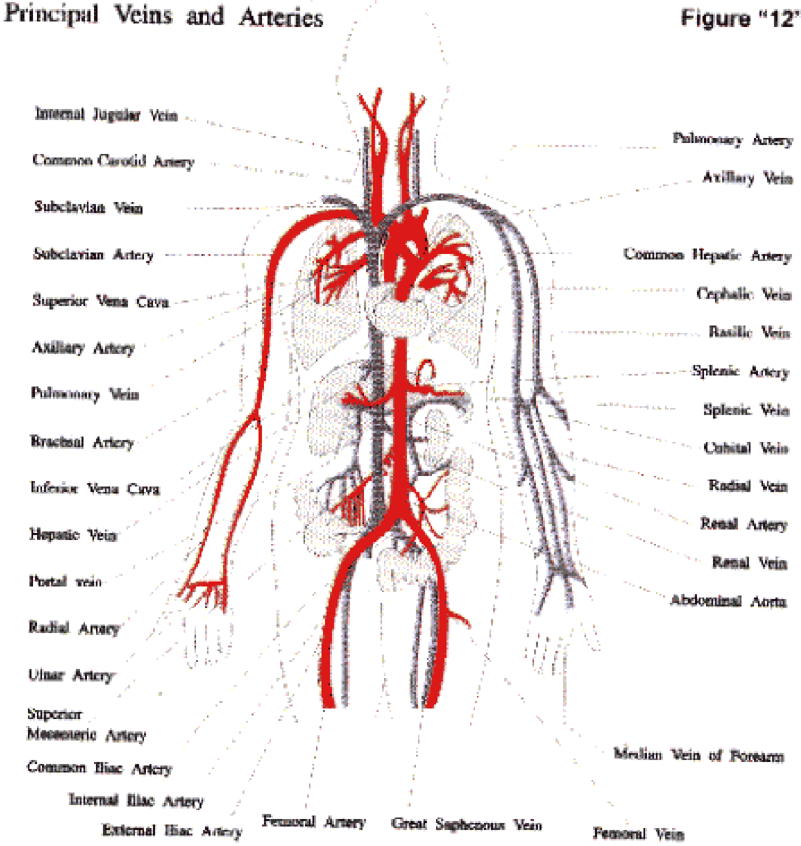
[1] Had Ibn al-Qayyem, the great scholar, had access to the modern equipment now available to medicine, such as the magnetic-based imaging (MRI) and the x-ray, along with the many sciences now focused on expanding our knowledge of physiology and the diagnosis of diseases, he would have written so cogently that any physician or intellectual would have been impressed.

The total blood contains 25 million red cells for carrying oxygen, and 25 billion white cells to resist bacteria and that are part of the immune system of the body. They are in five shapes. There are besides a million platelets to preserve the blood from bleeding and to produce coagulation in any bleeding vein. The main site for producing these cells is in the bone marrow which pours in the blood at the rate of 2.5 million red cells per second, 5 million platelets, and 120 thousand white cells. It is worth noting that the red cells transport 600 litres of oxygen to the body's cells every 24 hours. If the body receives a cut, the production of white blood cells is increased ten times, as every white blood cell produces anti-bacteria toxin, and can devour 40 bacteria.


v. juguraris interna
a. carotis communis
v. cava superior
arcus aortae
v. cephalica
vv. pulmonalis
v. cava inferior
a. brachialis
truncus coeliacus
a. hepatica communis
v. femoralis
a. femoralis

Blood Circulation
Principal Veins and Arteries

Figure "12"


Internal Jugular Vein
Common Carotid Artery
Subclavian Vein
Subclavian Artery
Superior Vena Cava
Axillary Artery
Pulmonary Vein
Brachial Artery
Inferior Vena Cava
Hepatic Vein
Portal vein
Radial Artery
Ulnar Artery
Superior Mesenteric Artery
Common Iliac Artery
Internal Iliac Artery
External Iliac Artery
Femoral Artery
Great Saphenous Vein
Femoral Vein
Median Vein of Forearm
Pulmonary Artery
Axillary Vein
Common Hepatic Artery
Cephalic Vein
Basilic Vein
Splenic Artery
Splenic Vein
Cubital Vein
Radial Vein
Renal Artery
Renal Vein
Abdominal Aorta

The digestive system

By just turning his attention to his food, the way it is taken in, the way it is held inside, and the way it is excreted, a human being will find many lessons and wonders. He can see how he has been provided with a tool to pick up the food, a gate to pass it inside, an instrument to cut it into small pieces, a grind stone to grind it and assisted with water to make a paste of it, a passage to lead it inside, very close to that of breathing, where the food passes inside and the breath passes outside, each without taking the wrong way. Then the food finds ways and paths that pass it to the stomach, which is a storage and collecting station, with two sphincters, one for passing food in and another for passing it out. The upper sphincter is wider than the lower, since the upper receives all that reaches it, while the lower is the exit for what is harmful. The lower sphincter is normally closed, so that the food may stay in the place designed for it; but once digestion is completed, that sphincter is opened (which is the reason it is called the door-keeper, while the upper is called the mouth of the stomach). Before the food reaches the stomach it is thick, but inside the stomach it is diluted and thinned. The stomach is surrounded from inside and outside with a heat that perhaps exceeds that of fire, by which the food is cooked, in the same way as the food is cooked in a pot with the water surrounding it, until solid things like stones or similar objects are dissolved, until all is semi-liquid.

Once it is liquefied, the healthy part of the food, or chime, floats to the top, and the residue sinks to the bottom. There are vessels from the stomach to all parts of the body to communicate certain facts about each organ, its nature and structure, which control its receptiveness and acceptance. The stomach sends the softest parts of chime to the softest organs. It provides sight to the sight-organ, hearing to the hearing-organ, smell to the smelling-organ, and so on to each sense organ according to its need. This is the softest product of food. And then it sends to the brain what is adapted to it in softness and balance, while the rest is sent to the other parts of the body through the various paths, each getting what it needs for nourishment and maintenance: the bones, the hair, the finger-nails, etc. How the food passes into the stomach through ways and paths, and leaves it through ways and paths, all that is a phenomenon of great wisdom and exceeding bounty. After it undergoes the digestive processes in the stomach, the food is transformed into blood, and into black and yellow bile. The Lord in His sublime judgement has willed that each of these humours should have a collecting station to pour into, and collect there, so that nothing but the most refined elements of the food should reach the noblest organs: therefore the gall bladder absorbs the yellow bile, the spleen the black bile, and the liver absorbs the purest part, the blood, which it passes on to all parts of the body via a single vessel that later divides into many branches. And so each single hair, neuron, bone, and vessel gets what ensures its survival.

The Digestive System

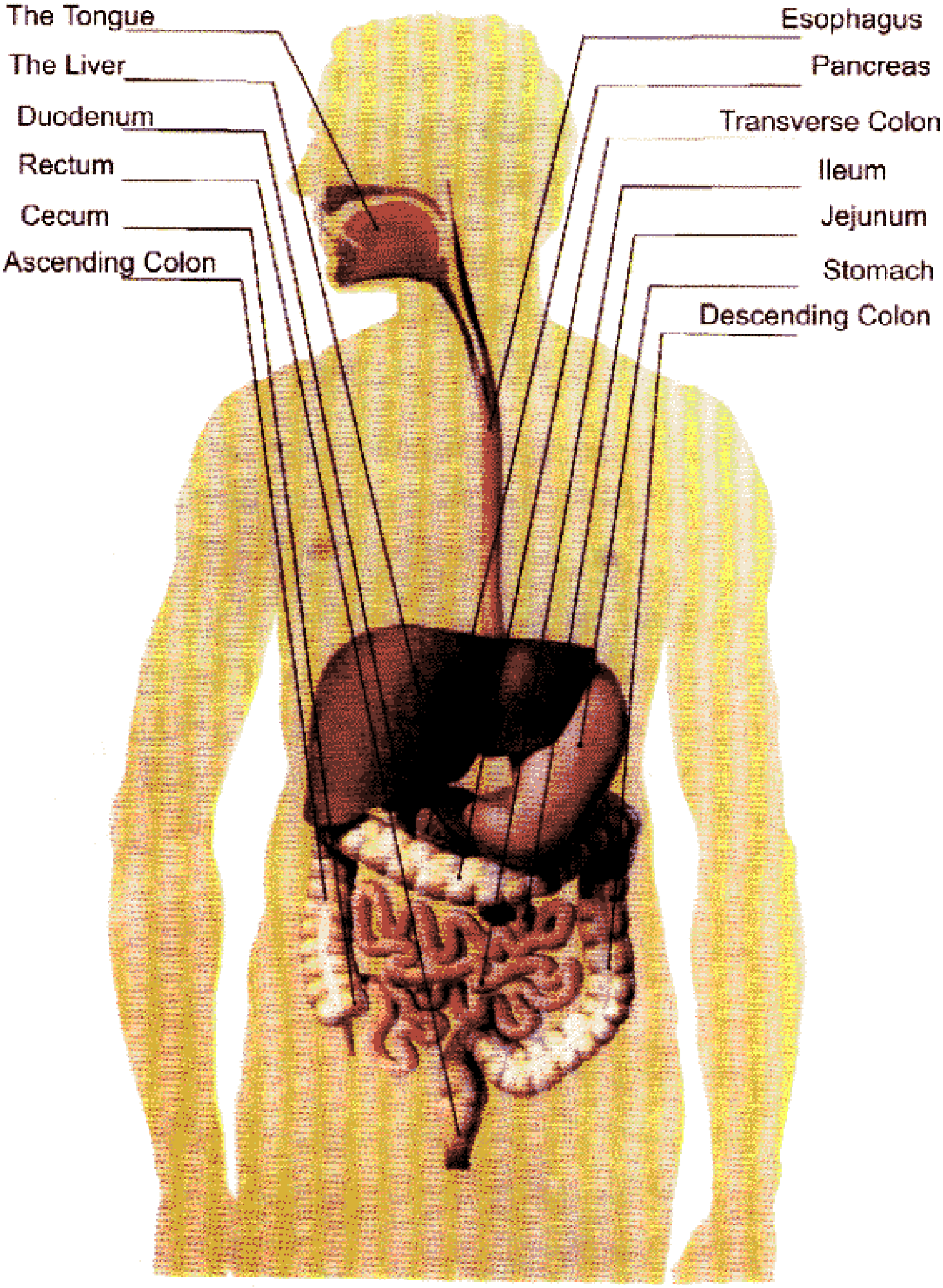

The Tongue
The Liver
Duodenum
Rectum
Cecum
Ascending Colon
Esophagus
Pancreas
Transverse Colon
Ileum
Jejunum
Stomach
Descending Colon

Figure "13"

The stomach and intestine

* The stomach has 35 million secreting glands, and the intestine has 3600 villi for absorption in each square centimetre.

* It is established by science that a gastric cell has a life span of 48 hours, and the gastric cells are continually replaced by new ones, a process that has nothing that resembles it, except for the renewal of blood. The small intestine is 8 metres long, and has a surface area of 40 square metres for maximum capacity of absorption, which is performed by the billions of villi on its inside lining. All kinds of nutrient material are absorbed, water, salts, vitamins, and even some harmful materials.

* The gastric cells that secrete hydrochloric acid are estimated to be one billion cells. Induced with histamine, they have a secreting capacity of 16 millilitres in 12 hours.

The liver

The liver is considered the body's largest gland, weighing about 1500 grams and consisting of 300 billion cells, which may be completely renewed in a period of four months, faster than the embryo's cells which are known for their fast renewal. The liver's functions are amazingly numerous, ranging from storing glycogen, fats and vitamins to detaining toxic substances and converting them to safe substances, or converting waste substances like ammonia from the protein waste to uric acid, a non-toxic substance. The liver is also the main centre for supplying the blood with glucose and blood proteins, enabling the blood to clot by producing fibrinogen. It also produces pigments, and forms cholesterol in its seven types.

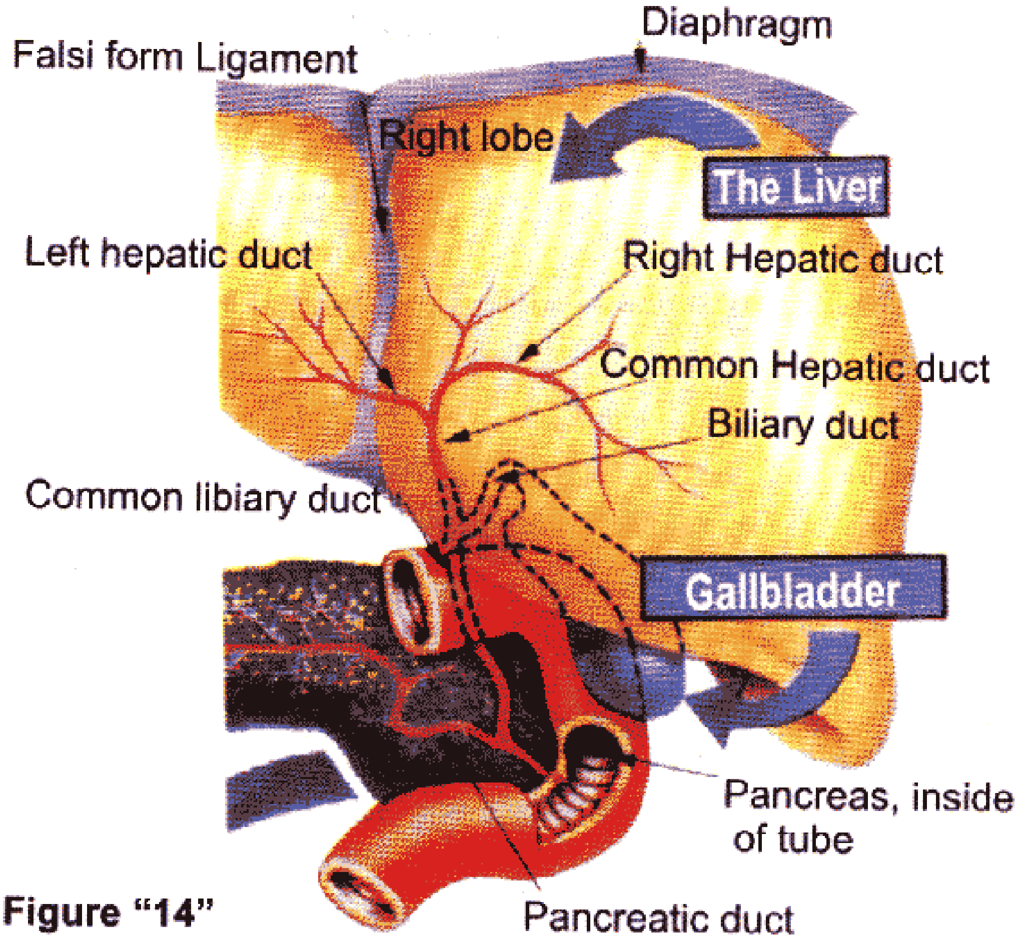

Diaphragm
Falsi form Ligament
Right lobe
The Liver
Left hepatic duct
Right Hepatic duct
Common Hepatic duct
Biliary duct
Common libiary duct
Gallbladder
Pancreas, inside
of tube
Pancreatic duct

Figure "14"

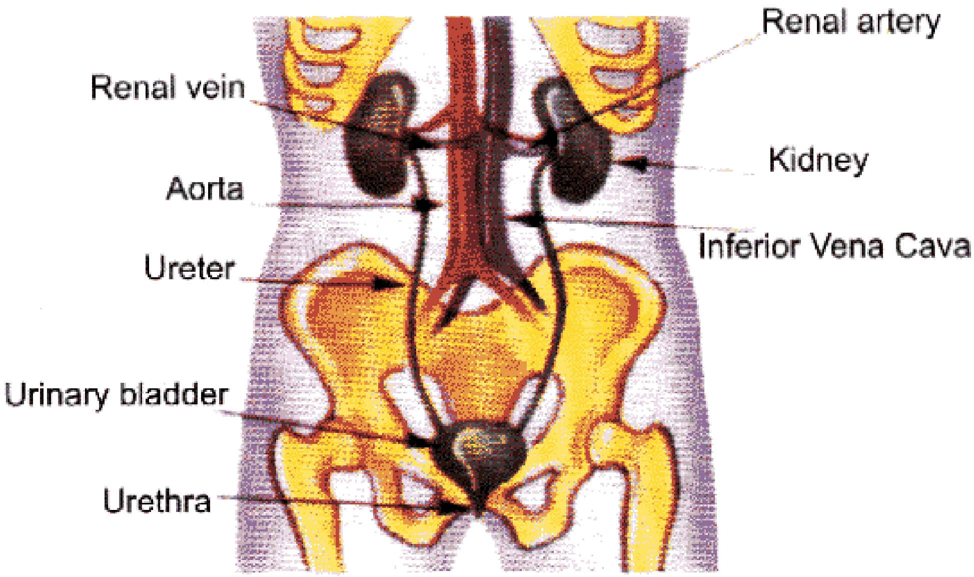

Renal artery
Renal vein
Kidney
Aorta
Inferior Vena Cava
Ureter
Urinary bladder
Urethra

Figure "15"

The kidney

Each kidney weighs 150 grams. It contains one million blood-filtering units, known as nephrons. Over a period of 24 hours, 1800 litres of blood pass through the kidney, 180 litres of which are filtered, the greater part of which is reabsorbed, and approximately 1.5 litres of which are excreted in the form of urine. The tubules that receive urine from the nephrons have a collective length of 50 kilometres. The blood is thus wonderfully purified of all its waste matter. It is as if we see the workmen of the municipal council cleaning the streets not once per day, but rather 36 times or more. The functions of the kidneys, however, are not confined to filtering; they have a warning system that alerts the bone marrow to regulate the secretion of red cells. They also have, in collaboration

> with the liver, an organizing system of blood pressure. Each kidney is topped with another gland, weighing seven grams, called the adrenal gland, whose cortex secretes scores of hormones that regulate glucose, salts and water in the body, and control the sex impulse. The core of this gland secretes adrenaline, a hormone that regulates blood pressure.

Who Took So Much Care of You?

Look then at yourself again, and think: Who took such great care of you - since you were a foetus in the belly of your mother, in a place where no hand could extend help to you, and no eye could reach you? You had then no way of seeking food or fending for yourself. Who caused the mother's blood to supply you with the nutrients that you needed, as a plant is nourished by nutrition-rich water, and how was that blood turned into milk? He sustained you in the narrowest of places, least capable of providing or gratifying your needs; He supplied you until your creation was consummated and brought to its perfect destination. When your skin was judged to be strong enough to be exposed to air, your eyes strong enough to meet the light outside, and your bones were sturdy enough to withstand the touch of hands and life on earth, your mother had the labour that ushered you out into the world of ordeals, with all its attendant hardships. It was then that your mother's womb ejected you in a way as if it had never embraced you, as if it had never held you from the day it accepted you as a drop until the day of ejection. It once used to enjoy having you in its fold, and now it screams in pain, and complains to the Lord about the burden that is you. So Who allowed you in it in the first place? Who made it enfold you and protect you until you grew to the right stage? And then He opened that gate and expanded it, for you to exit in the twinkling of an eye? You were not suffocated with its narrowness, and you were not held by the hardship of your passage through it. If you contemplate your entrance through that gate and then your exit through it, you will have enough to wonder at: Who inspired it to tighten when you were a drop so that you would not be infected, and later had it expand and open wide for you to exit strong and healthy? Then you came out alone, unescorted, weak, without shelter, or clothing, or property, or money: you were the neediest, weakest, and poorest of creatures. But He ordered the nourishment that you received inside to be transformed into milk preserved in two reservoirs hung on the breast of your mother. She bears your nourishment on her breast as she bore you inside her belly. Milk flows to those two reservoirs for you in the subtlest way through paths that have been predesigned to carry it; it pauses in those paths until the milk already in the reservoirs is exhausted, and then a replenishment is provided for you to suck. It is like a well that is never depleted, and is never blocked, running to you through obscure ways, untrodden ways! Who led it to follow those ways? Who purified it and gave it a delicious taste? Who chose its agreeable colour and made it to perfection? It is neither too hot nor too cold, neither bitter nor salty nor foul of scent. It is a feeding that is unlike that of the womb, different in quality and in nourishment. It reaches you when you need it badly, when you are extremely thirsty and hungry. It is a combination of drink and food. You just smacked your lips at the time of birth, and moved your lips seeking sucking, and you found the breast reaching down to you, like a water-vessel, anxious to satisfy your desire with its flowing milk. The teat at its tip is just the right size for your mouth, neither too big for it, nor uncomfortably small. The pore at its tip is just big enough for your convenience, neither big in a way that suffocates you, nor small in a way that you need to exert yourself in sucking at it; it is just the amount that the Great Judge has arranged to fit your convenience. Who directed the mother's heart to have all that extraordinary compassion for you and amazing mercy, so that she dedicates to you the warmest, most convenient and the most precious of her devotion. On the slightest crying or complaint you make, she will every time put your pleasure before hers, even if that happens every moment. She would come obediently to attend to your needs, without any call or exhortation but the call of her mercy and the exhortation of her compassion. She wished that any affliction you suffered were inflicted on her body, that not the slightest pain should come to you, that years may be cut off from her life and added to yours. Who made her feel like that? And then, after your body grew robust, your intestine expanded, your bones stiffened, and you needed tougher food, to solidify your bones, and strengthen your flesh, He supplied you with the tool of cutting and grinding, the incisors that cut the food, and the molars that grind it. Who held back the growth of your teeth while you were a sucking infant, out of mercy for your mother, and then let them out at the time you needed them, out of mercy for you, as a blessing and a boon to you? How would it be for your mother if you were born with incisors, canine teeth and molars? And if you lacked the same at the time you needed them what would you have done with the foods that are not digestible before they are cut and ground? Observe how the stronger you grew, and the more you needed teeth to eat various nutrients, those tools in your mouth were increased, until you had canine teeth, that can stand the tearing of meat, the cutting of bread, and the breaking of solid foods. And after you grew stronger, stronger teeth were provided for you, until you had the grinders, the hindmost of the molars. So who bestowed on you all these tools and provided you with them and enabled you to work on all sorts of food?

In His vast judgement, the Lord willed that you emerge from your mother's belly knowing nothing, a blank that has no intellect, no comprehension and no knowledge. This is really His mercy, since you, in your frailty, would not stand thinking, comprehension and knowledge: they would have shattered you. He rather evolved that gradually in you, step by step, so that it does not overwhelm you should it come in one blow. It grows in you little by little until it is fully grown. You may see an illustration of this in the infant who is snatched into slavery from its parents and from home before it has understanding: you see how it does not mind at all, while the more understanding it has, the more it feels the blow of bereavement. An adult taken into slavery is seen to be like one dazed and obsessed. Consider also that if you were born with your full intellectual power your life would have been one of great misery and vexation, for in that case you would see yourself a newborn, lactating infant, swaddled in some pieces of cloth, confined in your cradle, frail and unable to act, unlike the older people around you. So what would life be like in that state? Besides, you would not in that case have that sweetness, loveliness and appeal to all hearts and the affection that people have for the very young; you would rather be the most unpopular, burdensome, stubborn and curious of creatures. That you entered this world as a dullard who understands nothing, who knows nothing about what people engage in, has been sheer mercy and deep judgement; since you encounter things with your feeble mental power and without prior knowledge of things, and then your mental power and knowledge grow steadily and slowly, until you become familiarized with things. You practice things, and gradually overcome your bewilderment at them; then you stop being surprised and amazed at them; you begin to receive them with confidence, acting on them and taking control of them. There is even more to it than this. Who, then, is keeping such a close watch over you, keen to attend to your progressive needs, requisites, desires and tools at the time of their arising, not before and not later?

The finger nails were bestowed on you at the time you needed them, for a variety of purposes: they support the fingers and assist them. Since most of a human's work involves the tips of his fingers, and indeed depends on them, they were provided with nails to aid them. There are other benefits, though, since you use the nail to scratch your skin and remove stains without harming the flesh beneath. And that is not all the benefit of nails.

Look also at your hair, how it adorns your head, improves its look and protects it from heat and cold, the head being the real site of the senses, since all intellectual activity and reflections about the Lord and wisdom find their final station in it. The male is

distinguished by the beard with its extensions, which is agreeable to look at, adds respect and impressiveness to its wearer, signals the growth beyond youthful years and marks the distinction from the female; while the female maintains the same smoothness of face, since this adds to her charm and sex appeal in the eyes of the man.

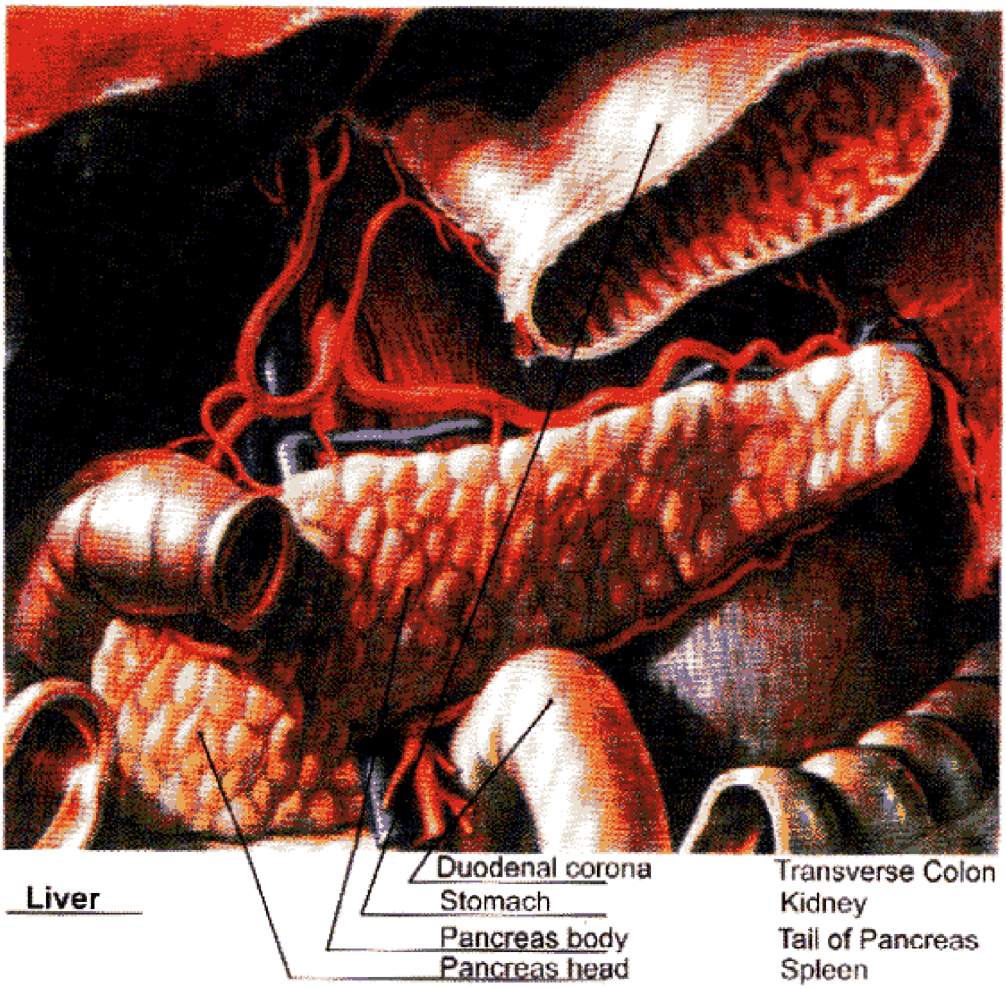

Liver
Duodenal corona
Stomach
Pancreas body
Pancreas head
Transverse Colon
Kidney
Tail of Pancreas
Spleen

Figure "16"

The pancreas

There is in the pancreas a cluster of glandular epithelial cells for secreting enzymes that pour into the small intestine, where three types of food are digested: proteins, carbohydrates, and fats. Another cluster of cells, known as Islets of Langerhans, is connected to the blood stream. They number 200.000-1.800.000, and have four types of cells, the most important of which are the alpha cells, which secrete the glucacon hormone which raises the level of glucose in the blood, the beta cells, which secrete insulin, whose main function is to regulate glucose in the body, or at least to facilitate delivering it to the cells, which use it as fuel for energy and heat. It should be observed that the amount of glucose is just one gram in each litre of blood precisely, which amounts to five grams in all the blood in the vessels. It does not stay in the blood more than a few minutes. The main source of supply of blood sugar is the liver, which contains glucogen, a concentrate sugar. The liver is the organ that controls the conversion of sugar, its dissolution, hydration, concentration, and dehydration.

The male and the female

Ibn al-Qayyem says:

If you think of the male and the female, you see that the liquid they are made of is the same, the structure is the same, the vessel is the same and the mating is the same. Who then gave maleness to males and femaleness to females? Let us not listen to the claims of ignorant naturalists about the cause of maleness and femaleness, who attribute this difference to natural matters that are seen to be true only occasionally; indeed, they are more false than true. In fact, maleness and femaleness only happen by Divine decree; when His command is executed by the Angel of Shaping, the latter asks the Lord: O Lord, will it be a male or a female? happy or unhappy? What about the earning? What about the span of life? And the Lord reveals whatever He chooses, and the Angel writes it down. If nature had a part in determining maleness and femaleness, it would also have a part in earning, span of life and happiness and unhappiness. It is either all or none, since all these things take place by a decree that is revealed to the angel. We do not deny that there are other reasons for these things, but they are reasons that are uniquely Allah's; humans have no control of them. One may cite the following verse from the Qur'an in this connection:

﴿ لِّلَّهِ مُلْكُ ٱلسَّمَٰوَٰتِ وَٱلْأَرْضِ ۚ يَخْلُقُ مَا يَشَآءُ ۚ يَهَبُ لِمَن يَشَآءُ إِنَٰثًا وَيَهَبُ لِمَن
يَشَآءُ ٱلذُّكُورَ ۝ أَوْ يُزَوِّجُهُمْ ذُكْرَانًا وَإِنَٰثًا ۖ وَيَجْعَلُ مَن يَشَآءُ عَقِيمًا ۚ إِنَّهُۥ عَلِيمٌ قَدِيرٌ ﴾
[الشورى : ٤٩، ٥٠]

"Allâh's alone is the dominion over the heavens and the earth. He creates whatever He wills: He bestows the gift of female offspring on whomever He wills, and the gift of male offspring on whomever He wills, or He gives both male and female to whomever He wills, and causes to be barren whomever He wills: for, verily, He is all-knowing, infinite in His power." (42: 49-50)

He mentioned in the above verses four types of women in relation to child-bearing: the woman who will have only girls, the one who will have only boys, the one who will have both boys and girls, and the sterile one, who will have no children at all. One proof that demonstrates that the cause of maleness and femaleness cannot be known by humans, nor can it be inferred by deduction and reflection,[1] but is rather learned from revelation, is a tradition of the Prophet's, reported in Sahih Muslim on the authority of Thawban, who said:

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[1] In support of this, it may be observed that modern science has discovered that the cause of maleness and femaleness is found in one of the 23 chromosomes of the man's semen, which fertilizes the woman's cell (the egg), which also contains 23 chromosomes. When both cells unite, the total number of chromosomes will be 23 + 23 = 46, the components of the first cell of the new human being.

I was once with the Prophet ﷺ when a Jewish rabbi came and said: Peace be upon you, O Muhammad! I pushed him (says Thawban) with such violence that he nearly fell to the ground. So he asked: Why do you push me? I said: Why don't you say in your greeting 'O Messenger of Allah?' The Jew said: We call him by his name, the one that his family gave to him. The Messenger of Allah, peace be upon him, said:

«إِنَّ اسْمِي مُحَمَّدٌ الَّذِي سَمَّانِي بِهِ أَهْلِي»

My name is Muhammad, the one my family gave to me. Then the Jew said: I come to ask you. The Messenger said:

«أَيَنْفَعُكَ شَيْءٌ إِنْ حَدَّثْتُكَ؟»

Will you benefit at all by what I tell you? He said: I will hear with my ears. The Messenger, peace be upon him, pushed a stick that he held in his hand in the ground, and said: «سَلْ» Ask! The Jew said: Where will people be when the earth will be changed to a different earth, and so will the heavens? The Messenger of Allah, peace be upon him, said:

«هُمْ فِي الظُّلْمَةِ دُونَ الْجِسْرِ»

They will be in the darkness, before the bridge. He said: And who will be the first people to pass? He said:

«فُقَرَاءُ الْمُهَاجِرِينَ»

The poor emigrants. He said: And what will they have for a treat at their entrance? He said:

«زِيَادَةُ كَبِدِ حُوتِ ذِي النُّونِ»

The appendix of the liver of the whale of Dhul-Noon. He said: And what will their food be next to that? He said:

«يُنحَرُ لَهُمْ ثَوْرُ الْجَنَّةِ الَّذِي كَانَ يَأْكُلُ مِنْ أَطْرَافِهَا»

An ox that grazes at the outskirts of paradise will be slaughtered for them. He said: And what will they drink with it? He said:

«مِنْ عَيْنٍ تُسَمَّىٰ سَلْسَبِيلاً»

A drink from a spring that is called Salsabeela. He said: You tell the truth! I'm also going to ask you about something that only a prophet in addition to one or two men would know. He said:

«يَنْفَعُكَ إِنْ حَدَّثْتُكَ؟»

Would it do you any good if I tell you? He said: I hear with my ears. Then he added: I come to ask you about the baby. He said:

«مَاءُ الرَّجُلِ أَبْيَضُ وَمَاءُ الْمَرْأَةِ أَصْفَرُ، فَإِذَا اجْتَمَعَا فَعَلاَ مَنِيُّ الرَّجُلِ مَنِيَّ الْمَرْأَةِ ذَكَرٌ بِإِذْنِ اللهِ، وَإِنْ عَلاَ مَنِيُّ الْمَرْأَةِ مَنِيَّ الرَّجُلِ أُنْثَىٰ بِإِذْنِ اللهِ».

A man's liquid is white, and a woman's liquid is yellow. If, when they meet, the man's semen dominates, then they will have a male, by the will of Allah; and if a woman's liquid dominates, then they will have a female, by the will of Allah. The Jew said: You have told the truth, and you are a true prophet. Then he left. The Messenger of Allah ﷺ said:

«لَقَدْ سَأَلَنِي عَنْ هَذَا الَّذِي سَأَلَنِي عَنْهُ وَمَالِي عِلْمٌ بِهِ حَتَّى أَتَانِي اللهُ بِهِ»

When this man asked about what he asked, I knew nothing about it until Allah told me of it.[2]

Both reason and authority prove that a foetus is created from both liquids. A man ejects his liquid into a woman's womb, and her liquid also flows to where his liquid is, so the liquids meet, for Allah's will to come true. The baby will be the outcome of the two liquids, and it will resemble more the parent whose liquid dominates. In evidence of this, we have a tradition, reported by Al-Bukharee in his "Saheeh", on the authority of Humaid, quoting Anas, who said: Abdullah bin Salam was told of the arrival of the Prophet ﷺ in Al-Madinah. So he came up to him and said: I will ask you about three things that only a prophet would know. Then he added: What is the first sign of the Hour (the Day of Resurrection)? What is the first food that the dwellers of Paradise will eat? And what will determine when the baby will take after its father, or take after its maternal uncles? The Messenger of Allah ﷺ said:

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[2] Reported by Muslim and Al-Nasa'ee.

«أَخْبَرَنِي بِهِنَّ آنِفًا جِبْرِيلُ»

Jibreel (Gabriel) has already told me about these things. (Abdullah put in here: that, among the angels, he is the Jews' enemy.) The Messenger ﷺ went on:

«أَمَّا أَوَّلُ أَشْرَاطِ السَّاعَةِ فَنَارٌ تَحْشُرُ النَّاسَ مِنَ الْمَشْرِقِ إِلَى الْمَغْرِبِ. وَأَمَّا أَوَّلُ طَعَامٍ يَأْكُلُهُ أَهْلُ الْجَنَّةِ فَزِيَادَةُ كَبِدِ الْحُوتِ. وَأَمَّا الشَّبَهُ فِي الْوَلَدِ فَإِنَّ الرَّجُلَ إِذَا غَشِيَ الْمَرْأَةَ وَسَبَقَهَا مَاؤُهُ كَانَ الشَّبَهُ لَهُ، وإِنْ سَبَقَتْ كَانَ الشَّبَهُ لَهَا» فَقَالَ: أَشْهَدُ أَنَّكَ رَسُولُ اللهِ.

As for the first sign of the Hour, it will be a fire that will drive people from the east towards the west. As for the first food of the dwellers of Paradise, it will be the appendix of the whale's liver. As for the baby's taking after its father, it is when the man has intercourse with the woman, and his liquid has dominance over hers. When her liquid has dominance over his, the baby will be more like her. He said: I testify that you are the Messenger of Allah, etc.

More evidence can be found in another tradition reported in both "Saheehs" of Al-Bukharee and Muslim, on the authority of Umm Salamah, who said: O Messenger of Allah, Allah is not shy of disclosing the truth, so I ask you, should a woman take ghusl, 'ritual bath', if she had seen a sexual dream? He said:

«نَعَمْ، إِذَا رَأَتِ الْمَاءَ الأَصْفَرَ».

Yes, if she sees the yellow liquid. She laughed and said: But does a woman have a wet dream? The Messenger of Allah, peace be upon him, said: «فَبِمَ يُشْبِهُهَا الْوَلَدُ؟»

How is it, then, that her baby resembles her?

The above three traditions prove that a baby is created from both liquids, that maleness and femaleness are determined by one of the liquids dominating the other and having precedence over it, and that resemblance is determined by one of the liquids having precedence over the other, which means that the liquid which reaches the womb first will determine whom the baby will resemble. Such things are not known to the naturalists, and there is no way to learn about them but from revelation. Nor is there in their scholarship anything that contradicts these notions. There is, however, about the tradition reported on the authority of Thawban some doubt in my mind: it may be that someone in the chain of reporters was not accurate in his memorization, that the real question had originally been about resemblance rather than about maleness and femaleness, as in the tradition in which Abdullah bin Salam is the inquirer. That might be the reason for Al-Bukharee not reporting Thawban's tradition.

There is in the two 'Saheehs' (of Al-Bukharee and Muslim) a tradition reported on the authority of Abdullah bin Abu Bakr, reporting Anas, who reported the Prophet ﷺ as saying:

«إِنَّ اللهَ وَكَّلَ بِالرَّحِمِ مَلَكًا يَقُولُ: يَارَبِّ نُطْفَةٌ، يَارَبِّ عَلَقَةٌ، يَارَبِّ مُضْغَةٌ. فَإِذَا أَرَادَ أَنْ يَخْلُقَهَا قَالَ: يَارَبِّ أَذَكَرٌ أَمْ أُنْثَىٰ؟ شَقِيٌّ أَمْ سَعِيدٌ؟ فَمَا الرِّزْقُ؟ فَمَا الأَجَلُ؟ فَيُكْتَبُ كَذَلِكَ فِي بَطْنِ أُمِّهِ».

"Allah has appointed an angel to be in charge of the womb. The angel says: O Lord! Now it is a drop of semen, now it is a clot, now it is a little lump. And when He wills to create it, the angel says: O Lord! A male or a female? Happy or unhappy? What about earning? What about span of life? So all that is written down when a baby is still in its mother's belly."[3] You see here how the Prophet ﷺ attributed maleness and femaleness entirely to the Divine will, and attached it to matters with which nature has nothing to do: happiness and unhappiness, earning and span of life. The angel who wrote it down had not inquired about anything that is connected with nature. Do you not see that Abdullah bin Salam only inquired about resemblance, for which an answer can be obtained, not about maleness and femaleness, although it is more impressive than resemblance. Allah, however, knows best. If what has been reported was actually uttered by the Messenger of Allah ﷺ then it is absolutely true. In any case, both versions discredit the naturalists' claim of their knowing the cause of maleness and femaleness. But Allah knows best.

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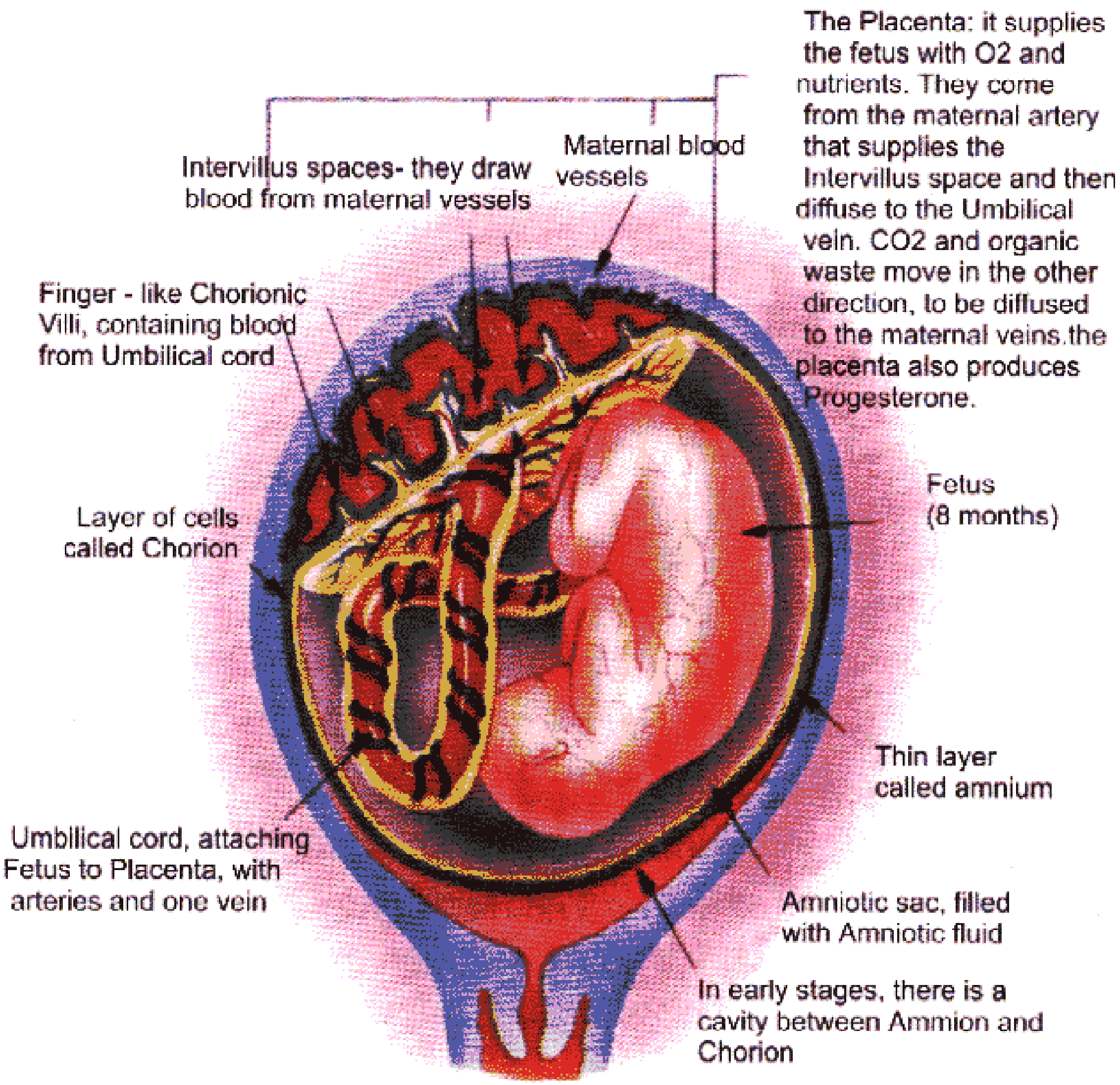
[3] Reported by Al-Bukharee and Muslim.


Intervillus spaces- they draw blood from maternal vessels
Maternal blood vessels
Finger - like Chorionic Villi, containing blood from Umbilical cord
Layer of cells called Chorion
Fetus (8 months)
Thin layer called amnium
Umbilical cord, attaching Fetus to Placenta, with arteries and one vein
Amniotic sac, filled with Amniotic fluid
In early stages, there is a cavity between Ammion and Chorion

The Placenta: it supplies the fetus with O2 and nutrients. They come from the maternal artery that supplies the Intervillus space and then diffuse to the Umbilical vein. CO2 and organic waste move in the other direction, to be diffused to the maternal veins.the placenta also produces Progesterone.

Figure "17"

The tools of reproduction in humans

Consider how the tools of reproduction of both the male and the female have been created to the best advantage. The man's is a protruding tool that extends so that it delivers the semen to the gate of the womb, in the same way as one hands something to another, stretching one's arm for the other to collect it. That is so because the semen must be ejaculated in such a way to reach the womb. The female, in contrast, has a hollow vessel, because she needs to receive a man's liquid, to hold it and keep it, and the tool she has is perfectly adapted to those functions. Because a man's liquid emanates from a man's various organs having low density, weak, not yet fit for the creation of the baby, the testes have been designed to be a pot where the liquid is processed and brought to a mature form, so that it concentrates and thickens, in order to be a suitable basis for the formation of the embryo. The woman, on the other hand, does not experience similar processes, since a man's liquid, in its thickness and density, meets her low-density liquid, and the latter then gains richness from the man's liquid. If both liquids were light and diluted, they would not have resulted in the creation of the baby. The man has been privileged with the mechanism of processing and condensing because he is more energetic, in contrast to the cool female. If she were entrusted with that tool, her disposition would not have facilitated the processing and maturation of the liquid. Another reason is that her liquid remains in its place, flowing from between her ribs until it settles in its designated place. A third reason is that because she is the receiver of intercourse, she has been endowed with such a tool as will suit her condition: she would not enjoy the intercourse if her tool were the same as the man's; the tool would remain idle and useless. And so, by being what they are, maximum advantage is realized for both parties.

Human organs from an aesthetic aspect

Consider now yourself, and think again of your physique. It will be enough for you just to do that. Contemplate every organ of your body, and consider the adaptation of each organ to the function it serves and the purpose of its existence. The arms are for handling things, grasping, collecting, handing, fighting and defending; the legs are for carrying the body, walking, riding and standing upright; the eyes are for exploring, beautifying, adorning, enchanting, and for observing the signs and miracles of the skies and the earth; the mouth is for eating, speaking, beautifying and other purposes; the nose is for breathing, discharging the waste matter of the brain, and adorning the face; the tongue is for speaking and expressing what you think and feel; the ears are the receivers of information which they deliver to you; the stomach is a store where food settles, so that it processes it and prepares it in a way that is unlike the cooking and preparation that it receives outside: you cook the food and prepare it on the assumption that it has received all the attention it needs to receive, that it no longer needs any further cooking or processing. But the cook inside will undertake an operation of cooking and processing that is concealed from your eyes; it performs an operation that is beyond your comprehension and ability; it exposes the food to a heat that would melt stones, and would even dissolve materials that no fire can melt. Otherwise, what breaks down those very heavy complex foods, until they become flowing liquid? Who made the liver discriminate and extract the purest and softest part of the food, then channel it into paths and ways to drive that food to each and every organ, bone, nerve, flesh, hair and nail; Who arranged gates and stages to admit what is beneficial for you, and bar that which is harmful; Who made various vessels as stores, one for food, one for blood; and arranged them to be specialized stores, so that none should get mixed up with any other: the gall bladder is independent of the spleen bladder, and again independent of the urine bladder, and of the semen bladder. Consider the case of the food as it reaches the stomach and settles there, how it flows from there to the rest of the body. When food reaches the stomach, it keeps and holds it; it processes it and matures it properly, then forwards it to the liver in fine paths. There is a thin film that separates that matter from the liver, a kind of fine filter; by filtering it no coarse components get to the liver and pierce it, because the liver is delicate, and would not stand tough materials. Once the digested matter settles in the liver, it distributes it to the whole body in preset paths, in a way rather similar to the pipes designed to carry water to irrigate land. The rest, which is waste water, is delivered to draining lands and wastelands designed to undertake that job. In the body, the gall is delivered to the gall bladder, the black gall is delivered to the spleen, and the liquid that remains is drained to the urine bladder.

A refutation of naturalists

Who was it who managed all that, perfected it, directed it and controlled it in the best way? Someone might, if he were one of the depraved, say: "It is the work of nature; there are wonderful things in nature." To such a debater we say: If Allah had led your heart, you would yourself have refuted such a statement by replying: "Tell me about this nature, is it self-sustained, having knowledge, and having the ability to contrive those wonders? Or is it not? Is it not rather just an abstract quality and a display of the visible things around?" If the answer occurs to you: "It is an independent entity with full knowledge, ability, will and wisdom," say: What you describe is the Creator, the Author and Shaper, so why do you call Him nature? Forget about what the naturalists dictate and turn to what Allâh has taught humans to call Him in the words of His messengers, and if you do you will be one of the happy and wise folk. Why attribute to nature the attributes that belong to Allah ? If, on the other hand, the adversary says: "Nature is an abstract quality, a display in need of an agent, and all that we witness of its accomplishments is brought about without nature having knowledge, will, ability, or even the mere consciousness of what it is producing. All that we see is evidence of nature's achievements;" then the reply should be that no sane person would accept this reasoning. Do you really believe that the amazing actions and subtle contrivances that we see in the world, that no mind can fathom or fully appreciate, are made by an agent that itself has no thinking, ability, wisdom or feeling? Would anyone believe such reasoning but a madman or an animal? You may further add: "If what you claim were true, it would be clear that such an abstract quality cannot have created itself or originated itself, so Who is its Lord, Maker and Originator? Who enabled it to do all that?" This logic is a most decisive piece of evidence in favour of believing in the Originator and Maker of nature, in the infinity of His ability, knowledge and wisdom. Indeed, this group has gained nothing by denying the Lord and His Attributes and Actions. They merely abolish the intellect and innate intuition. Nature itself would discredit such logic: it in fact contradicts mind, innate intuition, nature and even humanity, and it has caused the most ignorant and deluded attitudes that one can cause. If one does concede what the mind dictates and admits that it is not possible to have wise effects without the agency of a wise, able and knowing entity; that it is not possible to have well-controlled effects without there being a maker who is able, autonomous, in control of things, aware of what he is doing, not frustrated or overwhelmed by what he is doing – if one concedes that much then the right answer to such a person would be: What is the matter with you! When you accept the necessity of a great Creator beside Whom no other god exists, and no other lord, stop calling Him nature or the 'self-active mind' or such appellations. Say instead: What I describe is Allah, the Creator, the Originator, the Shaper, Lord of the Worlds, Sustainer of the heavens and the earth, Lord of the east and the west, He who made excellent all that He created, and perfected what He crafted. Do not deny His Names and Attributes and Self and attribute His making to another and His creation to someone else. You have to concede His existence, and attribute to Him authorship, creation, lordship and control. There is no other way, praised be Allah, Lord of the Worlds.

The meaning of nature

By reconsidering the word 'nature' in this context, you will be led directly to the Creator, the Originator, as the common mind understands the word. That is because this word 'nature' (Arabic: tabee'ah) means that something was made by someone to behave according to a preset plan, and there is no other meaning at all. The word 'nature' is of the same class of words as 'instinct', 'disposition', 'temperament', 'an animal's or a human's nature', and the like. An animal has been made to react to stimuli, a reaction which is ingrained in it. It is self-evident that a 'nature' without a 'nature-maker' is an impossibility: The very word, then, points to the Maker, the Almighty, just as its meaning indicates. Muslims believe that nature is one of Allah's creations, that it is under control, tamed, and that this is part of His law operative among His creations; that He manages it the way He wills, and when He wills, so that He may deny it any aspect of its power when He wills, and reverse any of its effects when He wills, so that His servants may see that He alone is the Creator, the Originator, the Shaper, and that

He creates whatever He wills, and in the way He wills. This is the meaning of the following verse from the Qur'an:

﴿إِنَّمَآ أَمۡرُهُۥٓ إِذَآ أَرَادَ شَيۡـًٔا أَن يَقُولَ لَهُۥ كُن فَيَكُونُ﴾ [يس : ٨٢]

"But His command, when He intends a thing, is only that He says unto it: Be! and it is." (36:82)

Nature, which is the utmost that those short-sighted lot can perceive, is no more than a creature of the Lord, equal in that to any of His creations. Considering this, how would a human, with the least bit of humanity or thinking, be blind to its being made to behave as it behaves, and how would he attribute to it making and originating! Time and again Allah halts its power, alters it and reverses it, so that it does the opposite of what it originally did, all to illustrate to His servants that it is His creation and making, that it is controlled by Him. That much can be supported by this verse from the Qur'an:

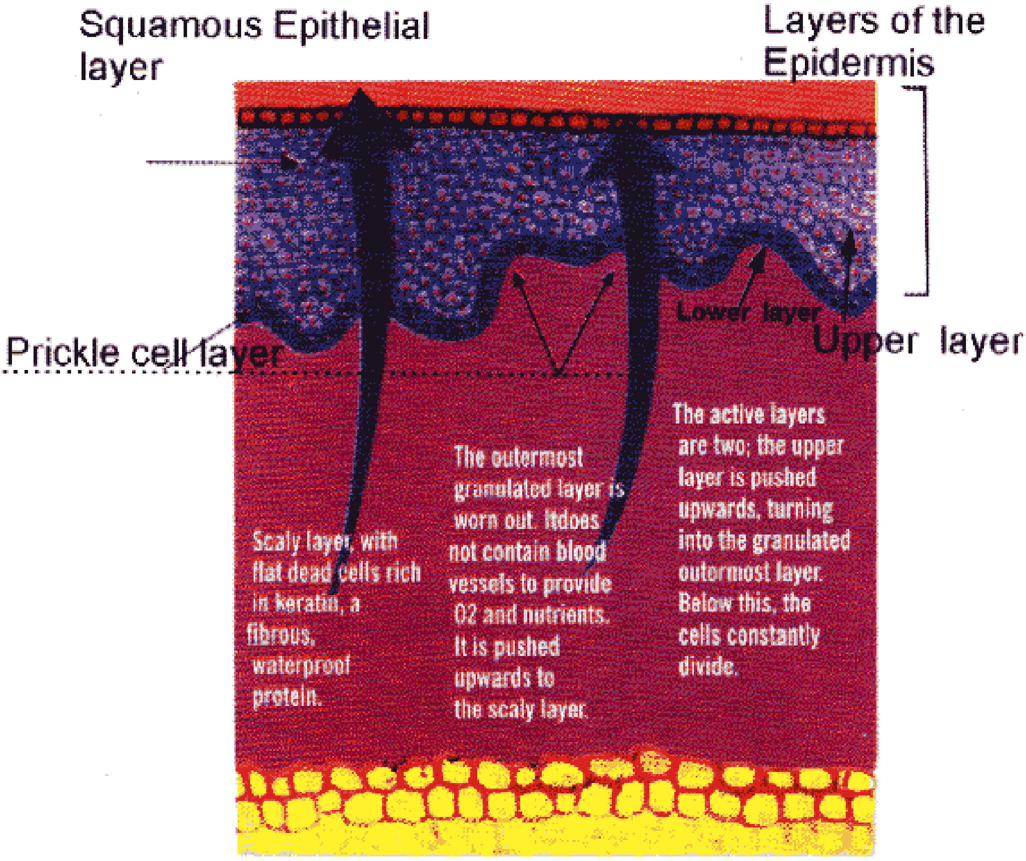
﴿أَلَا لَهُ ٱلۡخَلۡقُ وَٱلۡأَمۡرُۗ تَبَارَكَ ٱللَّهُ رَبُّ ٱلۡعَٰلَمِينَ﴾ [الأعراف : ٥٤]

"His verily is all creation and commandment." (7: 54)

In the best stature

Have a second look now at yourself, and consider the judgement of the Gentle, the Knower, Who, when He created the body, specified for every organ its position and assigned to it its function. See the stores which He designed to gather the waste material and hold it, so that it does not stay in the body and spoil the rest of the organs. Consider the wisdom of your development and the abundance of your parts, without any looseness or disharmony! If a goldsmith or sculptor had made a statue of gold, silver or copper and then wanted to enlarge it, could he do that without first breaking the statue and recasting it? In contrast, the Lord Almighty develops a child's body and its external and internal organs and all its parts, preserving all the time its appearance and shape, not disintegrating, not loosening, and not diminishing. Even more telling is the shaping of the embryo in the womb, where no eyes see it, and no hands touch it and no machines handle it! When he emerges he is a normal human being, with all that is requisite for his survival and progress in life: organs, senses, internal mechanisms, limbs, vessels, nerves, ligaments, membranes, and bones; all of various shapes, sizes, functions and positions; the flesh, fat, and brain with their intricate structure and subtle creation, revealing unfathomable judgement and splendid craftsmanship! It is all developed by the Best Creator from a drop of almost worthless liquid!

Reflect on what He iterated in His book concerning the beginning of creation and re-creation, calling you meanwhile to ponder over all this, for no reason but to increase the benefit you have from it and to guide you to the truth. Do not feel bored by the length of this chapter and the repetition in it, because it aims to drive the lesson home, since it is badly needed, and can prove to be greatly beneficial. Consider, then, what the Lord has privileged you with, raising you above all ignorant animals: He made you stand upright, sit comfortably, receive things, and approach any object at will, thereby enabling you to take care of things, have control of them, and manipulate them. If you were like the four-legged animals facing downward, your uniqueness would have not crystallized and come to light, and you would not have fulfilled much of your potential.



Scaly layer, with flat dead cells rich in keratin, a fibrous, waterproof protein.

The outermost granulated layer is worn out. Itdoes not contain blood vessels to provide O2 and nutrients. It is pushed upwards to the scaly layer.

The active layers are two; the upper layer is pushed upwards, turning into the granulated outermost layer. Below this, the cells constantly divide.

Figure "18"

The skin

* The skin's thickness ranges from .5 mm in the eyelids to 6 mm on the heels of the feet. Apart from some exceptions, like the palms of the hands and the soles of the feet, the skin is covered with hair, whose density ranges from 40 to more than 800 per cm^2. There are, in addition, 300 sweat pores in each square centimetre. A pore allows liquids to pass out of the body, but does not allow liquids from outside the body to pass inside, as they have one-way valves.

* There are, below the surface of the skin, about 5-15 million 'air conditioners' of the body. A sweat gland acts as a conditioner, as the evaporation of the sweat

through the skin absorbs a remarkable amount of body temperature. The skin's surface, which is 1.8 square metres, is unequally spotted with sweat glands. A sweat gland is a long twisting tubule that pumps sweat, and has special characteristics. It has a secreting capacity of about one litre per day. The total length of the sweat glands that are below the skin surface is about 4-5 kms.

Allah's honouring of man

We read in the Qur'an:

﴿۞ وَلَقَدْ كَرَّمْنَا بَنِىٓ ءَادَمَ وَحَمَلْنَٰهُمْ فِى ٱلْبَرِّ وَٱلْبَحْرِ وَرَزَقْنَٰهُم مِّنَ ٱلطَّيِّبَٰتِ
وَفَضَّلْنَٰهُمْ عَلَىٰ كَثِيرٍ مِّمَّنْ خَلَقْنَا تَفْضِيلًا﴾ [الإسراء: ٧٠]

"Verily We have honoured the children of Adam. We carry them on the land and the sea, and have made provision of good things for them, and have preferred them above many of those whom We created with a marked preferment."(17: 70)

Glorified be the Lord, who bestowed on man all aspects of honour: mind, knowledge, expression, speech, appearance, good looks, impressive aspect, fair stature, the acquisition of sciences through inference, reflection, and the upholding of righteous, decent ethics, such as loyalty, obedience and responsiveness. There is a world of difference between his state as a drop of clotted blood inside the womb, and his state when the angel will come to greet him in the Gardens of Eden!

﴿فَتَبَارَكَ ٱللَّهُ أَحْسَنُ ٱلْخَٰلِقِينَ﴾ [المؤمنون: ١٤]

"So blessed be Allah, the Best of Creators!" (23: 14)

The world is a village and a believer is its chief. Everyone is eager to work in his interest, and everybody has been directed to serve him and endeavour to run his errands. The angels, who are bearers of the Compassionate's throne, and those around it, pray in his favour; the angels who are assigned to accompany him protect him; the angels who are entrusted with rain and plants work hard to ensure that he gets his allotted earning, and they work for that; the orbiting bodies of heaven are obediently moving to fulfill his needs; the sun, moon, and stars run dutifully in their orbits so that he may refer to them in setting his times and schedules, and in taking care of the expenses of his property; space is subservient to him – its winds, air, clouds, birds and the rest of its creatures; the earth is all controlled to be in his service, to fulfil his needs – its land, mountains, seas, rivers, trees, fruits, plants, animals and all that exists on it. This is the meaning of the following Qur'anic verses:

﴿ ۞ٱللَّهُ ٱلَّذِى سَخَّرَ لَكُمُ ٱلۡبَحۡرَ لِتَجۡرِىَ ٱلۡفُلۡكُ فِيهِ بِأَمۡرِهِۦ وَلِتَبۡتَغُواْ مِن فَضۡلِهِۦ وَلَعَلَّكُمۡ تَشۡكُرُونَ
○ وَسَخَّرَ لَكُم مَّا فِى ٱلسَّمَٰوَٰتِ وَمَا فِى ٱلۡأَرۡضِ جَمِيعًا مِّنۡهُۚ إِنَّ فِى ذَٰلِكَ لَأٓيَٰتٖ لِّقَوۡمٖ
يَتَفَكَّرُونَ ﴾ [الجاثية: ١٢، ١٣]

"Allah it is Who has made the sea of service unto you that the ships may run thereon by His command, and that you may seek of His bounty, and that haply you may be thankful; and has made of service unto you whatsoever is in the heavens and whatsoever is in the earth; it is all from Him. Lo! herein verily are portents for people who reflect." (45: 12-13)

﴿ ٱللَّهُ ٱلَّذِى خَلَقَ ٱلسَّمَٰوَٰتِ وَٱلۡأَرۡضَ وَأَنزَلَ مِنَ ٱلسَّمَآءِ مَآءٗ فَأَخۡرَجَ بِهِۦ مِنَ ٱلثَّمَرَٰتِ
رِزۡقٗا لَّكُمۡۖ وَسَخَّرَ لَكُمُ ٱلۡفُلۡكَ لِتَجۡرِىَ فِى ٱلۡبَحۡرِ بِأَمۡرِهِۦۖ وَسَخَّرَ لَكُمُ ٱلۡأَنۡهَٰرَ
○ وَسَخَّرَ لَكُمُ ٱلشَّمۡسَ وَٱلۡقَمَرَ دَآئِبَيۡنِۖ وَسَخَّرَ لَكُمُ ٱلَّيۡلَ وَٱلنَّهَارَ ○ وَءَاتَىٰكُم مِّن
كُلِّ مَا سَأَلۡتُمُوهُۚ وَإِن تَعُدُّواْ نِعۡمَتَ ٱللَّهِ لَا تُحۡصُوهَآۗ إِنَّ ٱلۡإِنسَٰنَ لَظَلُومٞ

كَفَّارٌ﴾ [إبراهيم: ٣٢-٣٤]

"Allah is He Who created the heavens and the earth, and causes water to descend from the sky, thereby producing fruits as food for you, and makes the ships to be of service to you, that they may run upon the sea at His command, and has made of service to you the rivers; and makes the sun and the moon, constant in their courses, to be of service unto you, and has made of service unto you the night and the day. And He gives you of all you ask of Him, and if you would count the bounty of Allah, you cannot reckon it. Lo! man is verily a wrong-doer, and ingrate." (14: 32-34)

A person who travels around seeking to learn about Allah's bounty and to reflect on His wisdom and the splendour of His attributes is more broad-minded and a sharper thinker than the one who clings to his homeland and the traditions of his people, who would not hear of abandoning their way of life. The latter would say: I follow their (my people's) example. Do I not belong to Rabi'ah or Mudhar (two Arab tribes)? However, precious merchandise will not be obtained except by a person who takes the trouble to travel in the land and to look around in the various parts of the earth, until he is exhausted and longing to return; such a person will find easy what the indolent deem insurmountable, and will become familiar with what they find odd.

The miracle of the muscles

* A baby crawling on the floor. An adult scratching his nose: do you believe that behind these movements, little valued or noticed, there are more exact and subtle processes than the structure of the hydrogen bomb. Muscles have puzzled eminent scientists and researchers, and they are still often mystified, despite their ingenuity, by the secrets of muscles.

* Muscles account for more than half the weight of the human body. They have been described by a scientist as "The most splendid article that nature exhibits in its wonder-filled gallery," since they perform their vital role from birth until death. It is the muscles that start expelling a fetus from its mother's womb, a process that is accomplished by the action of the womb's muscles. It is the muscles that provide us with almost all our internal temperature. It is the muscles that push food down the alimentary canal; it is they that draw air into the lungs; and it is they that squeeze tears from the tear glands.

And, lastly, it is they that announce the cessation of life, as the cardiac muscle stops its beating, after having beaten 2.5 billion times in seventy years.

People often speak of iron muscles; what they do not notice is that the iron physique we feel when touching contracted muscles is caused by a jelly-like soft substance, and that this substance, when contracted, can lift a weight one thousand times its own weight. This is the most amazing fact of nature in the human body.

The series of chemical and electrical reactions that happen in a tiny muscle in less than a second – like the closing or opening of an eye – would take hours or even days if a researcher were to produce them in his laboratory.

There are three kinds of muscles:

* The striated muscles – muscles of voluntary movements that have the appearance of bundles of fine capillaries. It is they that propel us when we walk; it is they that we use when we lift a spoon, or shake our heads!

* The smooth muscles, whose movements are involuntary, control such processes as the motility of

food in the intestine during digestion, and the opening of the iris of the eye.

* The third kind is the heart muscle, which has unique characteristics. Its structure is midway between the above two kinds.

All three kinds of muscles are no more than devices for converting chemical energy (i.e. food) to mechanical energy (i.e. action).

Hundreds of books and articles have been written about muscles, but not one has adequately explained how muscles contract, or how the toe of the foot moves! So glory be to the Lord when He said:

﴿وَفَوۡقَ كُلِّ ذِى عِلۡمٍ عَلِيمٞ﴾ [يوسف : ٧٦]

"Above everyone who is endowed with knowledge, there is One who knows all."

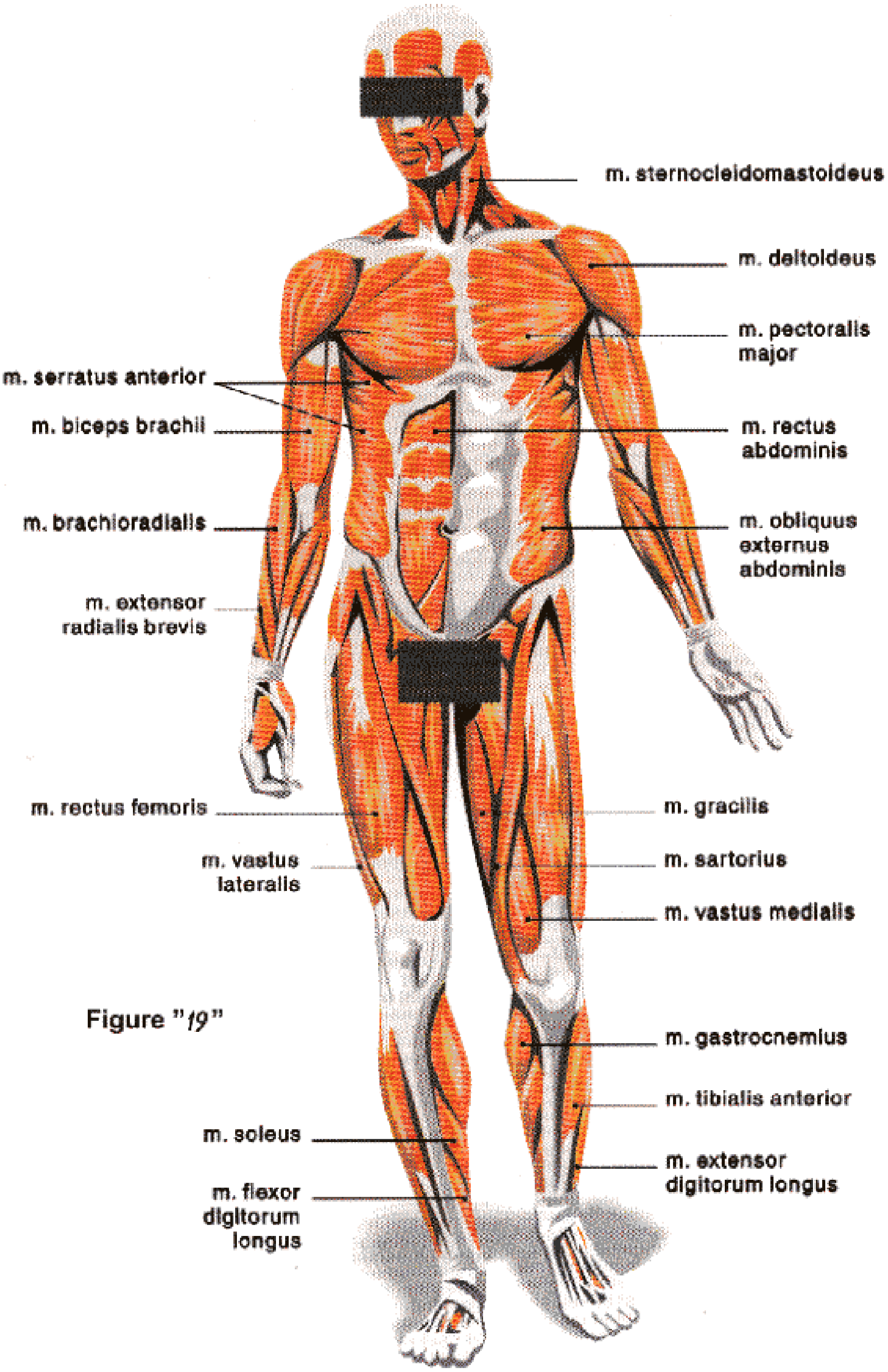

m. sternocleidomastoideus
m. deltoideus
m. pectoralis major
m. serratus anterior
m. biceps brachii
m. rectus abdominis
m. brachioradialis
m. obliquus externus abdominis
m. extensor radialis brevis
m. rectus femoris
m. gracilis
m. vastus lateralis
m. sartorius
m. vastus medialis
m. gastrocnemius
m. tibialis anterior
m. soleus
m. extensor digitorum longus
m. flexor digitorum longus

Figure "*19*"

The blessing of senses

Think again of yourself; reflect on the great wisdom of the All-Knowing Creator as attested by your creation. Think of the senses which are like windows from which to observe things around you. See how the Lord has caused most of them to be in the head, like lights placed at the top of a light-house, to explore things. He did not place them in organs that are exposed to rough jobs like the hands and feet: otherwise they would have received injuries that result from actions and movements; nor in organs in the middle of the body, like the belly or the back, for it would be uncomfortable for you then to turn to things and perceive them. Because no other organ is fit to hold the senses, the head was deemed to be apt to hold them, being the fittest and finest part of the body. It is the shrine of the senses.

Observe then the wisdom of making the senses five, to counterpart the five types of stimuli, and so no stimulus is left without a sense organ to react to it. Vision reacts to visible things, hearing reacts to audible things, smell reacts to the various scents, taste reacts to the various tastes, and touch reacts to tactile stimuli. Is there any perceptible thing left without a sense to perceive it? If there were, you would have been given a sixth sense to react to it. As the rest of things can be reacted to by the internal organs, He bestowed on you the internal senses. This system is so comprehensive that they say of a deep thinker: he uses his five to counter six, meaning that while he has only five senses, and the directions are six, his mind is so active that it helps the five senses to cope with six directions in his eagerness to search for answers.

Aids to the senses

Apart from these senses, there are powers independent of them, assisting in the process of sensing. The sense of sight is assisted by light rays; had they not been there, a sighted person would not have benefited with his eyes. The sense of hearing is assisted by the air which carries sounds through space, then delivers it to the ear, which receives and processes it, conveying it to the hearing faculty; without air, a human being would hear nothing. In the same way, the sense of smell has been assisted with the soft breeze; it carries the scent, and then delivers it to the smelling faculty, where it is processed and interpreted. One would not smell anything without the breeze. The sense of taste is also assisted by the saliva, in which taste-bearing particles are dissolved. In this way, the sense of taste can get the taste of things. It does not have a taste of its own, sweet or sour, salty or bitter – for if it had tastes of its ownit would have mixed all the things that enter the mouth with its own taste, and this would have inactivated this sense. The sense of touch has been assisted by a certain power conferred on it by Allah, by which it perceives the touched things. It does not need anything extraneous, in contrast with the other senses, but perceives things without mediation, because it perceives by contact, and so it does not require assistance.

From modern science

Allah the Almighty has, in His deep wisdom, made the strength of the senses accurately adapted to our need. If their power were less, our life would lose balance; and if they were sharper, man would be miserable because of the superpowerful senses. In support of this, we may cite thefollowing scientific fact: if man's senses were of such power as to perceive the microbes that surround him, the radiation that penetrates his body, the sounds that emanate from various microcosms, his mind would be unhinged, and he would lead an insufferable life.

If our sight were sharper, seeing the thermal and light radiation in their various degrees, we would see humans and animals in what we now consider complete darkness because of the thermal radiation emanating from those creatures; a doctor would realize that his patient is feverish by merely looking at him; we would know if irons and electrical appliances are hot at a glance; we would perceive new colours that we had not been able to perceive before; we would not only hear the din of examination machines when turned on, but would see and hear the electrical waves as they penetrate our bodies; physicians would not need phosphorous plates or sensitive film to receive those rays, as they would see the outlines of our internal organs, bones and strange objects directly in bodies; and we would see the radiation of uranium and other similar minerals.

Caves and tunnels that lie several metres below the earth's surface would not be, for us, in absolute darkness, because the vague cosmic ray penetrates through their roofs. Our eyes would be of such power that they would see millions of beneficial and harmful viruses and bacteria, which abound in air, foods and clothes – especially those bacteria that fly with the volley of liquid droplets when someone sneezes or coughs, and this would make us have phobias of sickness and a dread of being killed.

If the sense of hearing were stronger than it is at present, the noise made by cars in towns, and the blaring noise of factories would seem like the roaring of thunder or the blasts of cannons or bombs. We would not enjoy the calm of night even in the most quiet of places, because we would hear the rustle of bats and other creatures that make very little noise, which we do not perceive with our present sense of hearing.

Even if we could maffle all those outside noises, we could not stop that of the wrist watch, which is too close to us, or that of our hearts, or even the pulse in our internal organs. We would even hear the noise made by the air as it hit our bodies, a noise which would resemble the sound of drops of rain falling on boards of zinc. All the above noises would be especially vexing in the summer, when the rising temperature causes an increase in the blowing of dust.

Suppose that our sense of smell should increase to equal that of some animals. We would in that case do without police dogs, as we would be able to distinguish friends from enemies at a far distance; we would be repelled by many that we associate with now because of their foul scent. Soldiers would have to take account of the direction of the wind lest it should carry their scent to their enemies.

For our sense of touch to be sharper, the extensions of neurons would have to be more widely spread on the surface of our body, especially on the spots where there are none or few of them, like the back. On such spots, one would hardly distinguish the pricks of two pins separated by a distance of a quarter of an inch, while the tips of the fingers can distinguish the difference. If our bodies had that heightened sense of touch, it would be a great disaster, as our woollen, and even cotton, underwear would feel like needles on our bodies.

The destruction of any tiny spot in the brain's cells results in the loss of communication between it and a particular organ. From this we can appreciate the importance of obeying the Messenger's injunction, peace be upon him, not to hit the face, and not to insult anyone. (Adapted from: "Your Body, the House of Wonders")

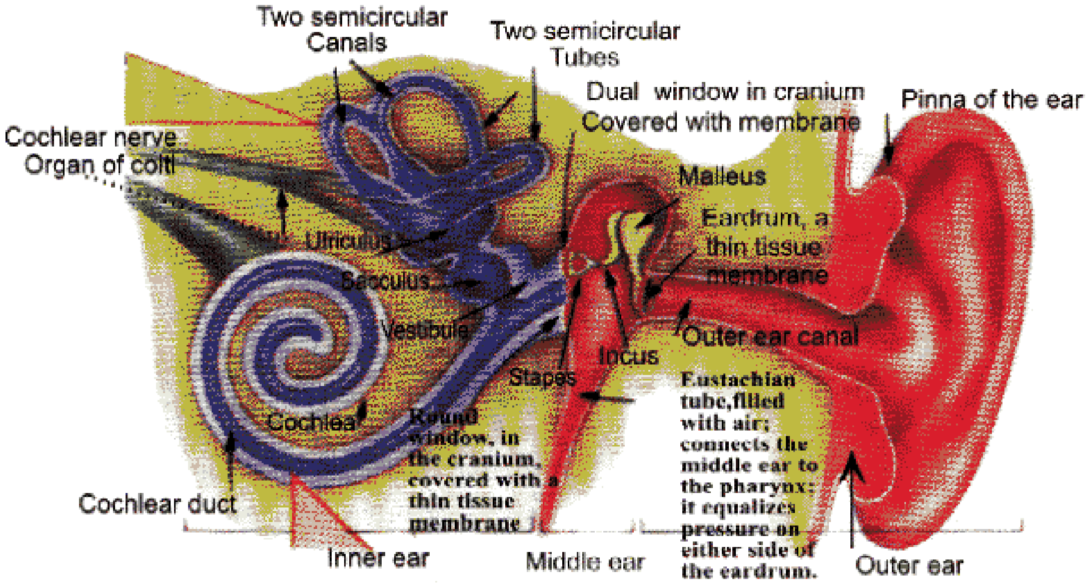

Two semicircular Canals
Two semicircular Tubes
Dual window in cranium Covered with membrane
Pinna of the ear
Cochlear nerve
Organ of colti
Malleus
Eardrum, a thin tissue membrane
Utriculus
Sacculus
Vestibule
Outer ear canal
Incus
Stapes
Eustachian tube,filled with air; connects the middle ear to the pharynx; it equalizes pressure on either side of the eardrum.
Cochlea
Round window, in the cranium, covered with a thin tissue membrane
Cochlear duct
Inner ear
Middle ear
Outer ear

Figure "20"

The ear and its structure

The organ of Corti is the 'retina' of the ear. It contains about one thousand cells to receive all kinds of sounds with amazing sensitivity. This organ of Corti, a constituent of the inner ear, is a spiral that forms 2.5 circles, in addition to a vestibule, consisting of an ampula and a sac, the semicircular canals which are responsible for maintaining the human's balance. Balance is a complex operation that involves the cerebrum, the cerebellum, and the inner ear. This last is the peripheral organ, while the other two organs are the central systems that control the balance of the human.

The question is: How can balance be achieved so accurately? And the answer is that it is a very complicated issue which has not been unravelled by medicine until now. It is enough to know that there is in the inner ear a part that is called 'the labyrinth', because a researcher is almost bewildered by the corridors, passages, walls, holes, chambers, openings, communications, the organizing net, and the interconnections among them all.

There is a connection between the inner ear and the middle ear through two windows, the circular window and the oval window. The circular, or upper window, connects the middle ear, with its three small bones, to the inner ear. The bone that is in contact with the circular window is the Stapes, while the bone that is in contact with the eardrum is the Malleus. Between these two bones is a third, the Incus, in addition to two muscles. All the above form the middle ear, which is connected to the oesophagus by the Eustachian tube, which equalizes pressure between the outer and middle ear, separated by the eardrum. The outer ear canal is the place where sound is directed to the eardrum, which then vibrates. The small hearing bones which are in contact with the eardrum transmit the vibrations faithfully to the circular window, which, in turn, conveys the message to the inner ear. Here the message is received and interpreted, then transferred as a nerve impulse to the general auditory centre in the brain (the temporal lobe).

The heart and its relations to the other organs

One of His wonders is that He created in the head three stores, connected to each other, one in front, one in the middle, and one in the rear. He endowed those three stores with precious treasures of His marvels: memory, reflection, and rationality.

Some of the wonders of His creation are internal things that cannot be viewed from outside, like the heart, the liver, the spleen, the lung, the intestine, the bladder, and other exquisite mechanisms and powers of various functions. The heart is the king who manipulates and employs all the body's mechanisms. It is surrounded by them, escorted by a retinue of organs. It is the noblest of the body's organs, the cornerstone of life, and the spring of the animal spirit and instinctive drive. It is the source and essence of intellect, science, tolerance, courage, generosity, patience, resignation, love, will, satisfaction, anger, and all the traits of integrity. All the external and internal organs and their powers are soldiers in the service of the heart. The eye is its scout and pioneer, exploring for it visible objects. It reports to it whatever it sees. The close attachment between the heart and the eye can be testified by the fact that if anything settles in the former, it shows on the latter: the eye is the heart's mirror, reflecting to an observer what is in the heart, in the same way that the tongue is the heart's interpreter, delivering to the ear what is in the heart. It is on these grounds that the Almighty combines all these three in such verses as this:

﴿إِنَّ ٱلسَّمْعَ وَٱلْبَصَرَ وَٱلْفُؤَادَ كُلُّ أُوْلَٰٓئِكَ كَانَ عَنْهُ مَسْـُٔولًا﴾ [الإسراء: ٣٦]

"The hearing and the sight and the heart – of each of these it will be asked." (17: 36)

Contemplating the case of the human without senses

Consider the case of the human who is deprived of the sense of sight. Think how grave is his bereavement. He does not see where to put his step, does not see what is in front of him, does not distinguish colours and agreeable and disagreeable sights; he does not benefit from the scholarship of books; he is unable to reflect and contemplate the wonders of Allah's creation. He cannot take note of much of what is advantageous or harmful to him; he may not be able to avoid falling in a hole in his way, nor protect himself from a wild animal, or an enemy intent on assailing and killing him. He cannot flee if attacked, but will have to be at the mercy of his adversary. Had it not been for special care from Allah, in some ways similar to that given to the newborn, he would be much more likely to perish than to survive. He is like a mass of flesh and bones, and that is why Allah promises him, if he is resigned and patient, that he will be rewarded with Paradise. It is an illustration of the immensity of the Lord's kindness that He compensated a blind person's vision with a mental vision, so that you see that he has the sharpest intuition and insight. Another grace is that he enjoys clarity of objective, so that he is not distracted or scatter-brained. In this way he can enjoy his life, and take care of what is good for him, and is not depressed, indignant or frustrated. This is true of those born blind. As for the one who lost his sight after he had been sighted, he is like all those who have had catastrophes, who have transferred from a state of well-being to one of suffering. He takes it very hard, because he is barred from what he had always enjoyed of sights, scenes, and ways of using his vision; his case is different.

Similarly, a person who is deprived of hearing misses the skill of communication and talking, and misses consequently the exchange of ideas and the pleasant experience of melodious sounds. People will be reluctant to communicate with him and will express annoyance at his presence. He will be cut off from people's news and conversation; he is present but not really present, alive but it is like death-in-life, close by but really far.

There has been much dispute concerning who is less deprived and more normal, a blind person or a deaf-mute. There have been many supporters of both views, and both parties have cited several points. This debate, however, refers to a more basic one: Which of the two senses is more valuable, hearing or seeing? I have mentioned above details of this debate[1], and I have listed there the arguments of the different parties and their proofs, and discussed the truth about the matter. Here we may add that the loss of the sense that is more basic to integrity will be graver. We can briefly say here that for an unsighted person the loss is more serious, but his loss is less in religious matters, and his outcome will be better. For the deaf person, on the other hand, the loss is less grave in worldly matters, but he misses more in a religious sense, and his outcome is worse. His deafness will deprive him of all the preaching and admonition, and his way is blocked to useful sciences, while the way is open to tempting desires that are visible, while he does not have enough knowledge to deter him from getting involved. Therefore, his religious disadvantage is greater, while the blind man's disadvantage in worldly matters is greater. It may be observed in this connection that there was not among the Prophet's Companions a deaf-mute, while there were a number of unsighted companions. It is rare that Allah should test his devotees with dumbness, while he may test many with blindness. This is then the decisive statement concerning this issue: that the deaf-mute's loss is religious, and the blind person's loss is worldly. It is a real blessing if one is spared both handicaps, and enjoys the use of both hearing and sight, and has them intact to the end of one's life.

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[1] This refers to an earlier part of his book, 'Miftah Dar-al Sa'adah', not icluded here.

The blessings of verbal expression and the will

As for he who is deprived of both sanity and verbal expression, he is no better than animals; they may indeed be better off than him, because animals are equipped with the abilities that are suitable for the position they occupy, while this human is ignorant of many things that beasts know, and exposes himself to situations that beasts would avoid. To lack verbal expression is less grave than to lack intelligence, but even the one who is deprived of the human distinguishing merit, verbal expression, faces a great deal of hardship and causes a great deal of hardship to others. He himself will have endless trauma and will feel great frustration when he fails to give an apt retort or an admirable reply. His situation is akin to that of the paralytic who has what he needs in view, but cannot reach out to it, neither by hand nor by foot. Let us remember then how great is Allah's blessing that He endows his servants with limbs, organs, powers, and the abilities that are thereby made possible. It is unfortunate that man very often takes no notice of Allah's boons, does not show gratitude for them, although if he were to miss any of them, he would have wished to sacrifice all that he possesses in the world to get that one faculty. Indeed, he enjoys to the full the well-being of his organs, limbs and powers, without feeling grateful for them. If the whole world were to be granted to him in place of one of his faculties he would readily have refused the exchange, realizing that such an exchange would not at all be a bargain. That is why we feel the truth of such Qur'anic verses as this:

﴿ إِنَّ ٱلْإِنسَٰنَ لَظَلُومٌ كَفَّارٌ ﴾ [إبراهيم : ٣٤]

"Lo! man is verily a wrong-doer, and ingrate." (14: 34)

The plurality of organs

Consider now the deep judgement of the Lord embodied in the organs which he willed to be single, in a pair, three or four, and what great wisdom such an arrangement implies. The head, the tongue, the nose and the penis are single, as there is no point in there being more of them. Do you not see that if there were two heads it would be a cumbersome burden without any benefit gained: all the senses that a human being needs are found in one head. If the head were two heads, a human would be split into two; he would speak, hear, see, smell, and taste with one, while the other would be idle and useless; and if he were to speak, see, hear with both simultaneously, then the second head would be a useless redundancy. If, on the other hand, their perceptions were different, that would cause a human distractions and a discrepancy in his conceptions. In the same way, if he had two tongues in the same mouth, and if he were to speak the same words with both tongues, then one of them would be useless; and if what he said with each tongue were different from the other, that would confuse the hearer, who would be at a loss which of the two statements to accept. If a human had two mouths, then one of the two would be useless and redundant, apart from the ugliness of appearance.

It is another story with the organs which were created in pairs, the eyes, lips, hands, feet, legs, thighs, hips and breasts. In all these, the wisdom that they embody is manifest, the benefit is clear, the beauty and agreeableness is obvious. If a human had a single eye, he would be disfigured. The same may be said of the brows. As for the two hands, two feet, two legs, and two thighs, the benefits of their duality are essential for the human, as he would be in a bad shape without them. Do you not see how a person whose hand or foot has been amputated is crippled and disabled? If the carpenter, the tailor, the blacksmith, the baker, the mason and other workers whose jobs cannot be performed without two hands have a paralysed hand, this will prevent them from pursuing their craft. From this it will be clear that wisdom dictates that there should be a pair of each of such organs and limbs. In the same way, a human has been given two lips, as this is essential for him: they provide a number of benefits, such as speech, taste, covering the mouth, good looks, adornment, kissing, and other benefits. As for parts of the body which have been created in threes, an example is the sides of the nose, and we have discussed this above. There are also parts in fours, such as the ankles of both feet, which are the converging points and holders of the feet. They are the point of power and movement of the feet, and they are the means of realizing the leg's benefits. The eye lashes provide a number of benefits and advantages, since they cover the eyes and protect them, beautify them and adorn them, besides other aspects of wisdom.

It must be clear by now that it is deep wisdom that all the organs are best in their actual number, shape and size, that if they were more or less, it would be to the loss of the creature. That is why some humans have more of this or less of that to be a manifestation of Allah's wisdom, for us to realize that if He so willed, He could have made all his creatures like this, so that a human who is not disabled should be aware of the Lord's blessing in creating him without handicaps, that there is nothing redundant in his body, and nothing missing, since the specimens are in front of him. That should be more of an incentive to express gratitude to the Lord and to praise Him, to realize that it is not the making of nature, but the creation of Allah, who perfected everything that He created, and creates what He wills to create.

Similarity of animals and dissimilarity of humans

How could nature devise such a wide variation and differences in the appearances of human beings? It is extremely rare that two persons are identical in every way. This is very unlikely to occur, while it is not so in the case of all species of animals, domestic, wild, birds, and so on. You see a herd of antelope, a flock of sheep, a herd of camels or cows, so resembling each other that you have to contemplate them for a long time to discover a distinguishing mark between one and the other. Humans, in contrast, vary widely in shape and physical build, in such a way that rarely do any two seem identical in even one feature, not even in tone of voice, not in one utterance. The wisdom of this should be clear, since people need to get acquainted with each other, distinguishing each for what he is in appearance and apparel, so that they can deal with each other. If such differences were not there, immense chaos and disturbance would arise; there would be no chance of distinguishing the plaintiff from the defendant, the creditor from the debtor; a man would not be able to distinguish between his wife and other women. Who is it, then, that made the differences in features, shapes, and voices, differences that no words can describe, and no eloquence can express? Ask the atheist then: "Is that the work of nature? Is there in nature anything that leads to the variation and distinction in the same species? How can that be compatible with the naturalists' claim that nature's works are unchanging since it is itself the same, not acting from will or volition, and so there can be no diversity in its actions?" How would the denier reconcile these two propositions? Indeed, real blindness is not in the eyes, but in the mind. It does happen that we see great resemblance between two humans, to such a degree that it is hard to distinguish one from the other.

When such a situation arises, it presents great hardship for everybody in dealing with the two persons. People feel badly in need of some distinguishing marks between the two, to know for instance the convicted from the innocent, to know who to blame for misdeeds. If identical names pose such difficult cases for the judge and the witness, how vastly more difficult it would be when individuals are identical in physical appearance and shape? In contrast, since resemblance does not harm lower animals, birds and beasts, there is no apparent wisdom in their having distinctive appearances. We glorify, then, the Lord, the Best of Creators, Whose Wisdom has encompassed all creation.

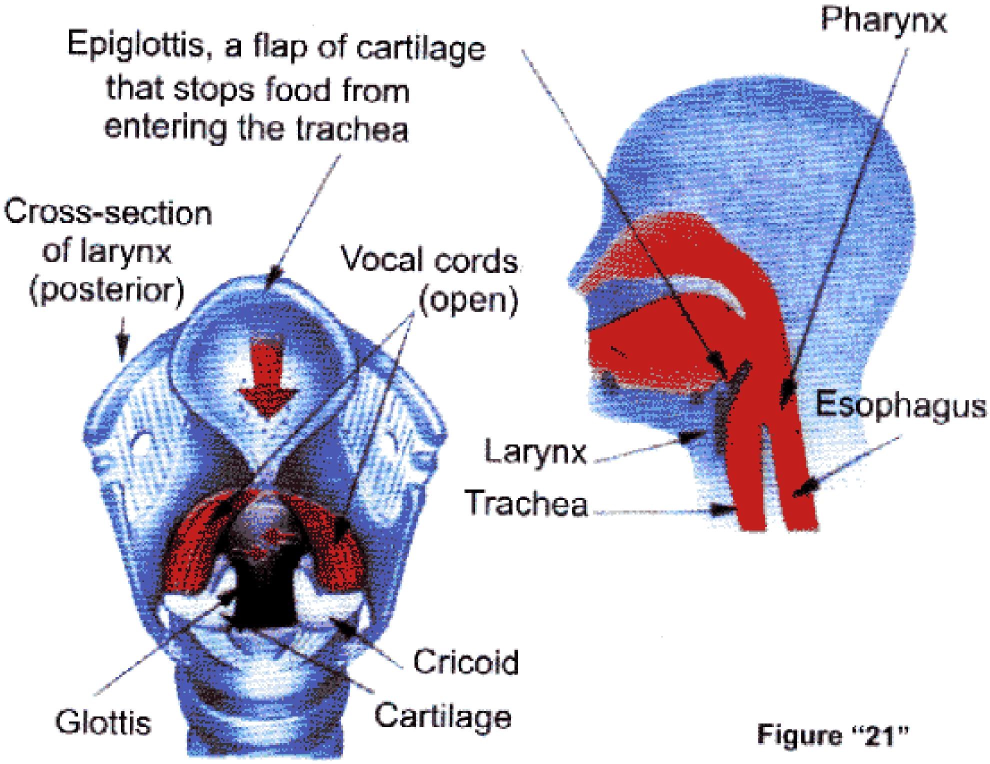

Epiglottis, a flap of cartilage that stops food from entering the trachea
Cross-section of larynx (posterior)
Vocal cords (open)
Glottis
Cricoid
Cartilage
Pharynx
Esophagus
Larynx
Trachea

Figure “21”

Voice and speech tools

Consider now speech, how the sound comes out from the throat and then is articulated to be distinct words; how its organs are crafted. Observe speech and its precision, the letters and their utterances, and notice the organs, segments and rhythms. You will find in all this great wisdom. As the air comes out as plain current from the chest, it rises up the windpipe, until it reaches the uvula, the tongue, the lips and the teeth, where it acquires segments, distinctions, and tones that make each syllable heard and each tone distinguished clearly from any other. In this way the letters are identified. You see how the windpipe is one, the air that rises in its plain form is uniform; but it then reaches straits and barriers, where twenty-nine different letters [in Arabic] are audible. The whole process of speech is based on that; speech with all the requests, prohibitions, information and inquiries; verse, prose, speeches, sermons and trifling; some amusing, some pathetic, some disheartening, some encouraging and some frightening; some promising and consoling, some saddening, depressing, or refreshing; some sickening, some healing. Observe how some speech alienates from blessing, and brings down calamity; some may ward off ordeals, and invoke bounty; some wins over hearts, reconciles discords, brings together antagonists, and some does the opposite. On account of some words that one has uttered carelessly, one will descend into hell – a distance farther than the east from the west; on account of some words that one has uttered without giving them importance, one is raised to the highest places, close to the Lord of the Worlds.

Glorified be He Who created all that from plain air that rises from the chest, seemingly without aim, without direction, and without particular destination. Besides all that, there are the differences in languages and dialects, more than anyone but Allah can encompass. Groups of people from diverse climates happen to meet in one place, each speaking in his or her language, each language controlled by exact rules, having its own rhythm, and the different groups know nothing of what the other groups are saying. The tongue as a tool is the same in shape and appearance, so are the uvula, the molars and the lips; but the words that are produced are vastly different. As a miracle, this is not unlike a plot of land, irrigated with the same water, but growing diverse and greatly different plants, flowers, grains, and fruits. It is on these grounds that Allah, the Almighty, mentions that both aspects of creation are signs, in the following verses:

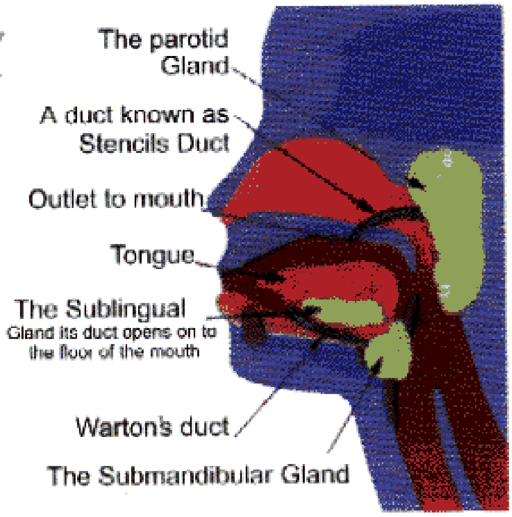
﴿ وَمِنْ ءَايَٰتِهِۦ خَلْقُ ٱلسَّمَٰوَٰتِ وَٱلْأَرْضِ وَٱخْتِلَٰفُ أَلْسِنَتِكُمْ وَأَلْوَٰنِكُمْ ۚ إِنَّ فِى ذَٰلِكَ
لَءَايَٰتٍ لِّلْعَٰلِمِينَ ﴾ [الروم: ٢٢]

"And among His wonders is the creation of the heavens and the earth, and the diversity of your tongues and colours: for in this, behold, there are messages indeed for all who are possessed of innate knowledge!" (30: 22)

﴿ وَفِى ٱلْأَرْضِ قِطَعٌ مُّتَجَٰوِرَٰتٌ وَجَنَّٰتٌ مِّنْ أَعْنَٰبٍ وَزَرْعٌ وَنَخِيلٌ صِنْوَانٌ وَغَيْرُ صِنْوَانٍ
يُسْقَىٰ بِمَآءٍ وَٰحِدٍ ﴾ [الرعد: ٤]

"And there are on earth many tracts of land close by one another and yet widely differing from one another; and there are on it vineyards, and fields of grain, and date-palms growing in clusters from one root or standing alone, all watered with the same water." (13: 4)

Think now of the throat, how it is a kind of pipe for the passage of air, while the tongue, the lips, and teeth are for articulating letters and producing tones. Do you not notice how a person who has lost his teeth cannot pronounce properly the letters which are articulated by the teeth and the tongue? Do you not notice how a person who has lost his lip cannot pronounce properly the 'r' or the 'l' sounds? How a person who has an ailment in the uvula cannot properly pronounce the uvular letters? Anatomists have compared the rising air stream to the flute, the lung to the bellows that supply it with air, the muscles that surround the lungs to the hands that press the bellows to propel the air up the bronchi, the lips and the teeth that form the letters and tones to the fingers that alternately block the holes on the flute to produce a melody, and the barriers that obstruct the flow of air to the holes on the flute. In view of that it has been said that the flute is made on the model of the production of sounds in the human. If you marvel at the skill of humans who make with their hands those wonderful instruments, you ought to wonder much more at the Divine workmanship that produced those letters and sounds from among flesh, blood, veins and bones. And the outcome is worth noting indeed. But it is human nature that what is habitual does not drive people to wonder. When people observe some novel accomplishment devised by humans they glorify the Lord and praise Him, but they bypass the amazing and staggering signs of His greatness that resemble nothing around us. Consider the diversity in the tone and pitch of voices despite the apparent identity of throats and uvulas, tongues, lips and teeth. Who effected all those distinctions quite clearly despite the great resemblance of the apparatus that produce them? Who but the Creator, the All-Knowing!


The parotid Gland
A duct known as Stencils Duct
Outlet to mouth
Tongue
The Sublingual
Gland its duct opens on to the floor of the mouth
Warton's duct
The Submandibular Gland

Three pairs of Salivary Glands make the food that we eat lubricated, and thus easier to swallow and digest

The Salivary Glands the sketch shows only three glands, but their are three identical glands on the opposite side.

Figure "22"

The saliva gland and the tongue

With 17 muscles that move it in all directions and three nerves controlling the transmission of sensation, the tongue helps in chewing, swallowing and tasting food, and is essential in the production of speech. There are on the surface of the tongue 9000 taste buds to recognize the four tastes: sweet, sour, bitter and salty. During chewing and swallowing, six glands with ducts secrete saliva into the mouth to soften the food and prepare it, assisted by 32 cutting and grinding tools, the teeth.

Other benefits

The above tools provide other benefits and advantages apart from speech. The throat is the channel that leads the cool breeze to refresh the heart at every successive inhalation. The tongue serves as the tool of tasting, where various flavours are tasted and enjoyed or not, and where they are evaluated. It also serves to push the food and turn it around to facilitate the job of the uvula. The teeth have the advantage mentioned above, that of cutting the food; but they also serve to give solidity to the lips lest they droop and disfigure the face. It may be observed how the person who has lost his teeth has hanging-down lips. The lips themselves provide several advantages. They help in sipping drinks in the desired amount, so that the drinker does not choke. They are also a closed door to hide the mouth, which receives whatever is thrown up from the belly, and where begins the descent of what is taken in. The lips are a lid and a roof, which is opened and shut at will. At the same time, they adorn the face and beautify it, and that is not all. Consider the person who has lost his or her lips, how disfigured he or she looks! It must be clear by now that each of the mentioned organs serves so many purposes, performs many tasks, and has many advantages and benefits. Each is a tool that can be used for many purposes.

The systems of the head

If you were to see the brain and witness its formation and structure, you would be astounded and overwhelmed. It is so complex that the mind boggles, and it is shrouded in membranes and layers that lie on top of each other, so that it is protected from any mishaps, and to maintain its well-being. Above all that, there is the cranium that shelters the brain like a helmet, protecting it in case it is exposed to a fall, shock, or blow. The cranium itself is covered with skin, protecting the bone from exposure to injuries, and over that there is ample hair to protect the skin and shelter it from heat, cold and injuries. The latter is also an adornment and adds beauty of looks. You may well ask the denier: Who is it that covered the brain with the utmost care, privileged it with a special status, and chose it to be a cabinet supplied with a myriad advantages, powers and marvels? Who is it that sealed that cabinet, supplied it with extreme fortification, protected it most thoroughly, and deemed it to be the controller of senses and perceptions? Who made the eyelids shade the eyes like a cover, their edges like trees, and the eyelashes like shelves lining the eye when it is opened? Who had the eye's layers arranged one on top of the other, seven in all, the same in number as the heavens, each layer playing its particular role, so that if any one layer failed it would mar the vision? Who is it that placed the eyes admirably in the face, and made them the source of beauty, the mirror of the heart; a scout and guardian of the body, a pioneer that is sent ahead to run errands, never grumbling, never fatigued, despite the innumerable times it is employed and the trips it takes? Who endowed the eyes with illuminating vision, all focused to the size of the lens, which encompasses heavens and earth, mountains, sun and moon, oceans and wonders, all admitted through seven layers? Who located it high in the face, similar to a sentinel stationed on a high hill to guard the body? Who concealed the king (i.e. the heart) in the chest, established it on the throne of the kingdom, with all the organs, limbs and internal and external systems in its service, the way soldiers serve their king, obliging and obedient, complying to orders, heeding prohibitions, striving, and seeking their ruler's contentment; not allowed to rebel against its authority, nor to retire from its service; one is a messenger, one a courier, one an interpreter, some are assistants; each having its assigned part which it never goes beyond, never meddling in another's business. Whenever the king desires relaxation, it orders them all to keep quiet and calm; and when it wakes up, the soldiers await its pleasure, each resuming its job willingly and constantly. If you were to observe the heart in its court, the missions and decrees it issues and receives, the soldiers in its service, the couriers carrying the mail between the king and its subjects, you would really stand transfixed! It is vast indeed what the ignorant and visionless person has missed of wonders and enlightenment and lessons which may be obtained without the trouble of journeying and roaming. This is the purport of the following Qur'anic verse:

﴿ وَفِي ٱلْأَرْضِ ءَايَٰتٌ لِّلْمُوقِنِينَ ○ وَفِيٓ أَنفُسِكُمْۚ أَفَلَا تُبْصِرُونَ ﴾ [الذاريات: ٢٠، ٢١]

"And in the earth are portents for those whose faith is sure. And also in yourselves. Can you then not see?" (50: 20-21)

Here He is urging His servants to ponder over their existence, to find in it a guidance to the Creator and Originator. It is the urgency of such a call that makes me expatiate and dwell so long on this issue. I do this with the conviction that it pays to do so, since it expands intellectual capacity, provides precious knowledge, and increases a believer's faith. Many a guardian stands in protection of the heart! many a servant! and many a slave! but it goes ahead in its work unheeding of others. Impressive indeed is what Allah has created for the sake of man, what He has put at his beck and call! Great indeed is man's responsibility! Great indeed are the felicity and luxury or misery and torture that will be his recompense! He will either be seated on the throne of royalty, firmly established in the favour of a Mighty King, in view of his Lord's face, hearing His speech; or thrown in the great jail, among layers of blazing fire, receiving painful torture. If man, the king, realized what is awaiting him, he would not greedily seek royalty in this world, and strive to win the majesty that never fades or wears away. But he is under many veils of ignorance. It is all for an end that Allah will see to its fulfilment.

Do you know how the brain operates ?

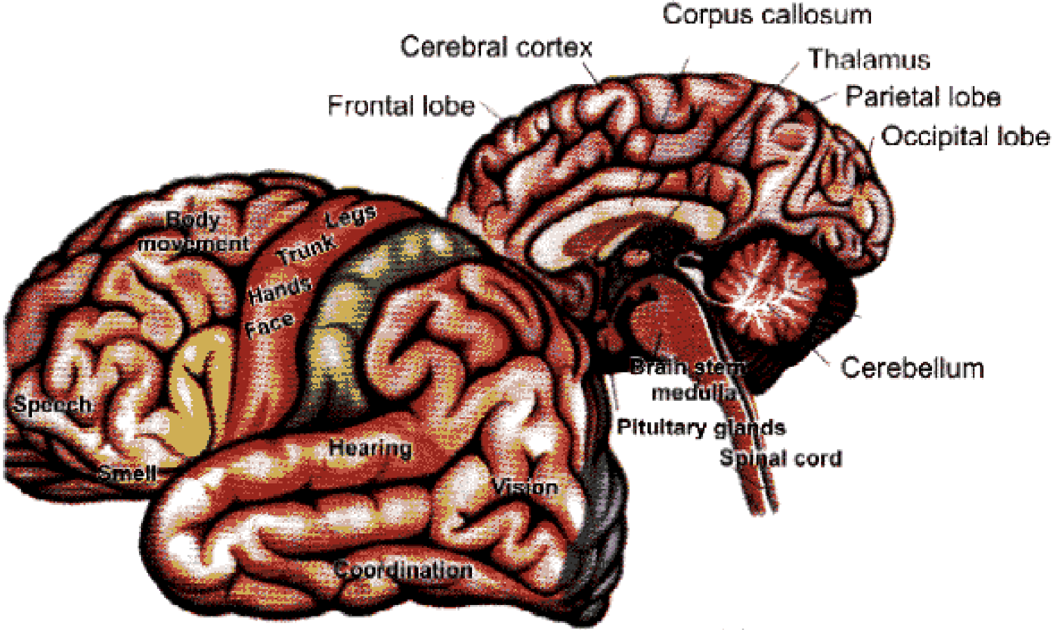

Corpus callosum
Cerebral cortex
Thalamus
Frontal lobe
Parietal lobe
Occipital lobe
Body movement
Legs
Trunk
Hands
Face
Speech
Smell
Hearing
Vision
Coordination
Brain stem medulla
Cerebellum
Pituitary glands
Spinal cord

Figure “ 23”

The brain

* The brain consists of 13 billion nerve cells (neurons), and of 100 billion supporting cells, known as glial cells. These latter are a strong barrier to protect neurons from being harmed by any substance. Tumours mainly grow at the expense of glial cells, as if neurons are immune from cancer. The brain is nourished only by glucose, in contrast with the heart, which is nourished by glucose or lactic acid. It appears that the brain prefers the luxury of glucose, having priority over all the other body organs. If the body has a shortage of nutrients, it is the brain, the noble organ, that is privileged with nutrients rather than any other organ.

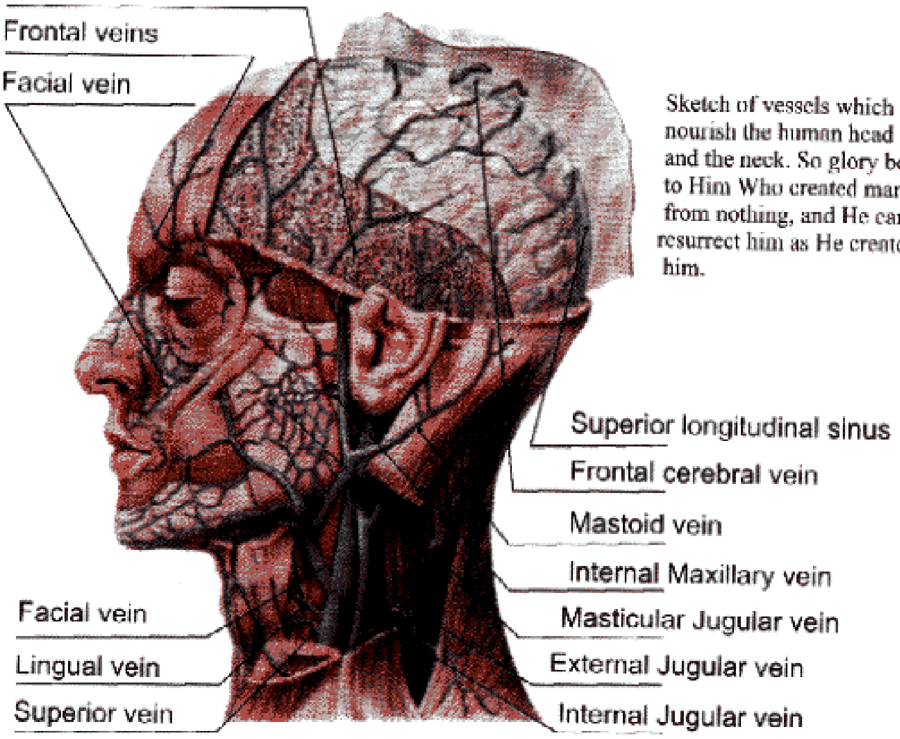
* Every day, the brain requires 115 grams of glucose, a certain amount of phosphate, 10-15% of the oxygen consumed by the body, and at least 1000 litres of blood. If any of these nutrients is lacking, the brain will fail to perform its vital role well.

* The brain cells are some of the noblest parts of the body, since they represent the body's governing system, which faithfully does the thinking and knowing task for the body. The rest of the body is the public that submits to the ruler with loyalty and obedience. It is on this account that the brain has three membranes, in addition to the bony plating that securely preserves the head as a locked box. The cerebral liquid spreads between the membranes to play the part of shock absorber. This careful sealing has been mimicked by the space scientists who designed the space capsule – they provided it for protection with layers and liquid in the same way as that described above.

* The spinal cord has a diameter of about 1 cm, and it is 54 cm long, with 31 pairs of nerves that branch from it.

* There are, in the human body, about 800,000 nerve cells in the front horn of the spinal cord. Polio occurs if two thirds or more of these are destroyed. The front horns of the spinal cord are responsible for muscle movement, while the posterior centres are responsible for transmitting all kinds of sensation (pain, heat, cold, pressure, touch, deep sensation, etc.)

* The approximate number of the brain cells is 13 billion. Some nerve cells in the various parts of the body are connected to about 18,000 other cells, which enables them to flash to the brain with an astounding speed detailed reports about each cell in the body.


Frontal veins
Facial vein
Superior longitudinal sinus
Frontal cerebral vein
Mastoid vein
Internal Maxillary vein
Facial vein
Masticular Jugular vein
Lingual vein
External Jugular vein
Superior vein
Internal Jugular vein

Sketch of vessels which nourish the human head and the neck. So glory be to Him Who created man from nothing, and He can resurrect him as He created him.

Figure "24"

The arteries of life

* Blood going to the brain returns to the heart in 8 seconds, while the blood going to the feet returns in 18 seconds.

* At the normal heart rate of pulsation, a red blood cell makes 1500 cycles during a whole day (a carrier which carries 1500 times each day without getting tired)!!

* There are in each cubic millimeter of blood 5 million red cells, about 25 million red blood cells in the whole blood, an amount that would

cover an area of 3450 square metres. If the red blood cells were put in a line, one next to the other (the average diameter of a red cell is 7 microns), they would make a line that circles the earth 6-7 times. The capacity of the bone marrow to produce red blood cells can increase 5-6 times, and a red blood cell has an average life span of 120 days. Its life span can decrease to 20 days without the appearance of anemia. A red blood cell covers in its oxygen-carrying trip a distance of 1150 km along the body's vessels. Each cell has the complex hemoglobin, which consists of 574 amino acids, in addition to fat, carbohydrates, enzymes and vitamins, etc. In the case of a lack of oxygen, the number of red blood cells rises to 7-8 million/cubic mm, especially when we climb heights, and in the embryo, since in this case the lungs cannot function, which is why it is said that a human embryo sits on Mount Everest!!

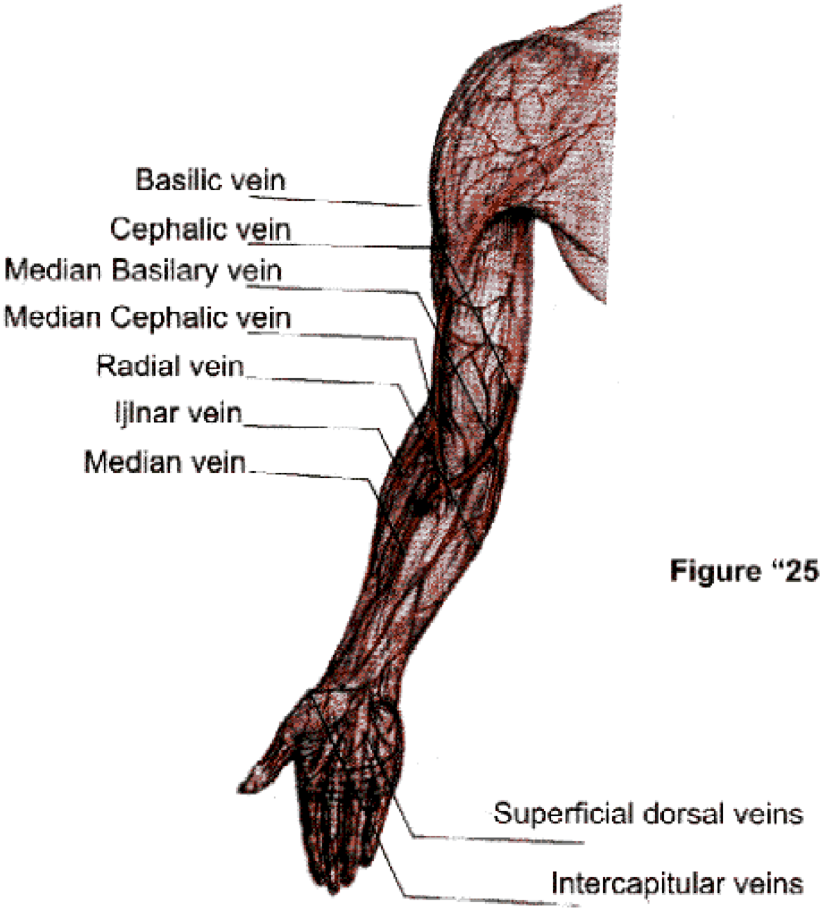

Basilic vein
Cephalic vein
Median Basilary vein
Median Cephalic vein
Radial vein
Ijlnar vein
Median vein
Superficial dorsal veins
Intercapitular veins

Figure "25"

Inquiries concerning the human being

Imam Ibn Al-Qayyem, may Allah have mercy on him, says:

* Who made the palate have two outlets: one for voice and breathing connected to the lungs; and the other, the oesophagus, for food and drink, leading into the stomach? Who separated them with a barrier that prevents each from reaching the other? If food were to reach the lungs, it would be fatal to the organism!

* Who deemed the lungs to be ventilators to the heart, cooling it, never failing or becoming exhausted, since the heart would perish should its heat be unventilated?

Who arranged for the food waste to be disposed of through outlets, and had them controlled with sphincters that close and open at will, so that they do not ruin a human's life, and prevent people from socialising?

* Who caused the stomach to have extremely robust nerves, since it is destined to break down and process foods? If it were soft flesh it would itself be broken down and decomposed. It has a texture like a sturdy nerve, so that it endures the degradation and digesting of food, without itself being broken down by the extreme heat from beneath.

* Who made the liver soft and malleable, since it is destined to receive soft and mild food and metabolise it, and these activities are soft in contrast with the stomach's tasks?

* Who had the soft and fragile brain fortified by hard compartments of bone, to protect it and shelter it, so that it does not get ruined and infected?

* Who had the fluid blood run in vessels in the same way as water runs in pipes, so that it is controlled and not spilled and wasted?

* Who made the nails at the tips of fingers and toes to protect them and support them while they perform various tasks and crafts?

* Who made the passage inside the ear as straight as a nail, so that sound slides along it without obstruction until it gets to the internal ear where the sharpness of draught has softened, lest it ruin the delicate parts there? Who built into this passage the mechanism to prevent

insects from penetrating to the inner ear and to catch them before they do so, and to stop other harmful matter, motes and dust, from penetration; not to mention other advantages?

* Who provided the thighs and buttocks with more flesh than the rest of the body, so as to protect the bones from having pain after long periods sitting on the ground, which is true of a person who grows thin and has little flesh? Such a person has pain because there is no protective flesh between his bones and the ground.

* Who made the eye's liquid salty to guard it from melting; the ear's liquid bitter to guard it from flies, insects, and mosquitoes; and the mouth's liquid neutral to let it perceive the taste of things and not submerge other tastes with its own?

* Who chose for the location of the anus the most hidden part of the body, in the same way as an experienced builder chooses for the toilet the most unnoticed part of the house? The outlet in the human body is concealed from the eye, not visible from behind or protruding in front. It is rather concealed in an obscure place of the body, where the two thighs squeeze it and hide it with their mass of flesh. When one squats to pass stool, the outlet is exposed close to the ground.

* Who made the human incisors sharp to cut food and chop it, and made the molars wide enough to crush it and grind it?

* Who willed that the hair and nails in humans are insensitive to pain, since they become long and need to be cut or clipped. If they were sensitive they would give pain, and it would be hard to cut them when desired? One would have had to face one of two disastrous alternatives: to let them grow so long that they became a real annoyance and too large to endure, or to suffer the pain of cutting them.

The Imam then adds:

The wisdom of creation does not have to be understood in every respect, nor even in part, by all mankind. Indeed, what they know is a small fraction compared to what they do not know. The knowledge of all creatures, relative to the aspects of wisdom embodied in the hidden secrets of creation and the control of creation, may be compared to the sipping of a bird relative to the volume of the sea. For the one who has understanding and is perceptive, it suffices to extrapolate what he does not know from what he knows, and to realize that there is wisdom in what he does not know that is equal to, or even more, and more subtle wisdom, than what is known to him. The foolish, imbecilic deniers are like a person who knows nothing of the sophistication and accuracy of professions and sciences like masonry, geometry, or medicine; or even crafts like spinning, tailoring or carpentry; yet he aims with his ill-judgement to criticise the masters of such professions, sciences and crafts about their devices, industry or the management of their careers. Whenever he tries some intricate point and fails to fathom it, and when he realizes that it was above his head, he simply says: "There is no point in this! Why should this be so?" That is with the professionals, who are human beings like the ignorant critic, who can, with patience, emulate them or even surpass them. How would it be, then, when such ill-judged criticism concerns the Lord's doings, whose wisdom has overwhelmed intellects, Who has no equal in His wisdom, in the same way as He has no equal in His creation: He has no rival in any way. A person who fancies that he can evaluate the Lord's wisdom with the criteria his mind encompasses, or sets his minds to be a scale of His wisdom, only conceding what comes within his comprehension, and denying what is beyond it; such a person is indeed the most miserably deluded of humans.

There are aspects of wisdom in God's creation that are unfathomable, and they are in great abundance. No sane person can deny this.

Let it be known to you now that under the roots of this hair, there is such warmth and humidity as is required for its growth by nature. Do you not see that grass grows in a quagmire after the water has dried up because of the moisture it has absorbed? The spots that have been chosen for the growth of hair are of the most humid areas on the body. Nature has secreted the waste matter and humidity through the skin, and that was in the form of hair. If they were trapped inside the body they would harm it and injure its interior. Therefore, disposing of them is absolutely in the interest of the organism. When waste matter and humidity are held inside, that is a sign of defectiveness and failure. The situation is similar to the discharge of the menstrual blood, which is definitely for the good of the woman, and a sign of her good health. Do you not see how those in whom the hair on the head and beard fails to grow after it is due to grow suffer some abnormality and are frail? If you can comprehend the above about hair and some of the wisdom of its being as it is, why do not you admit to what you do not know?

* Who caused the saliva to trickle inside the mouth all the time, without interruption, to moisten the palate and uvula, to facilitate speech and to moisten the food? Apocrates has said: The moisture in the mouth is the vehicle of food. Consider your condition when your saliva partially dries up, when this invaluable spring slows down!

Human Respiratory System

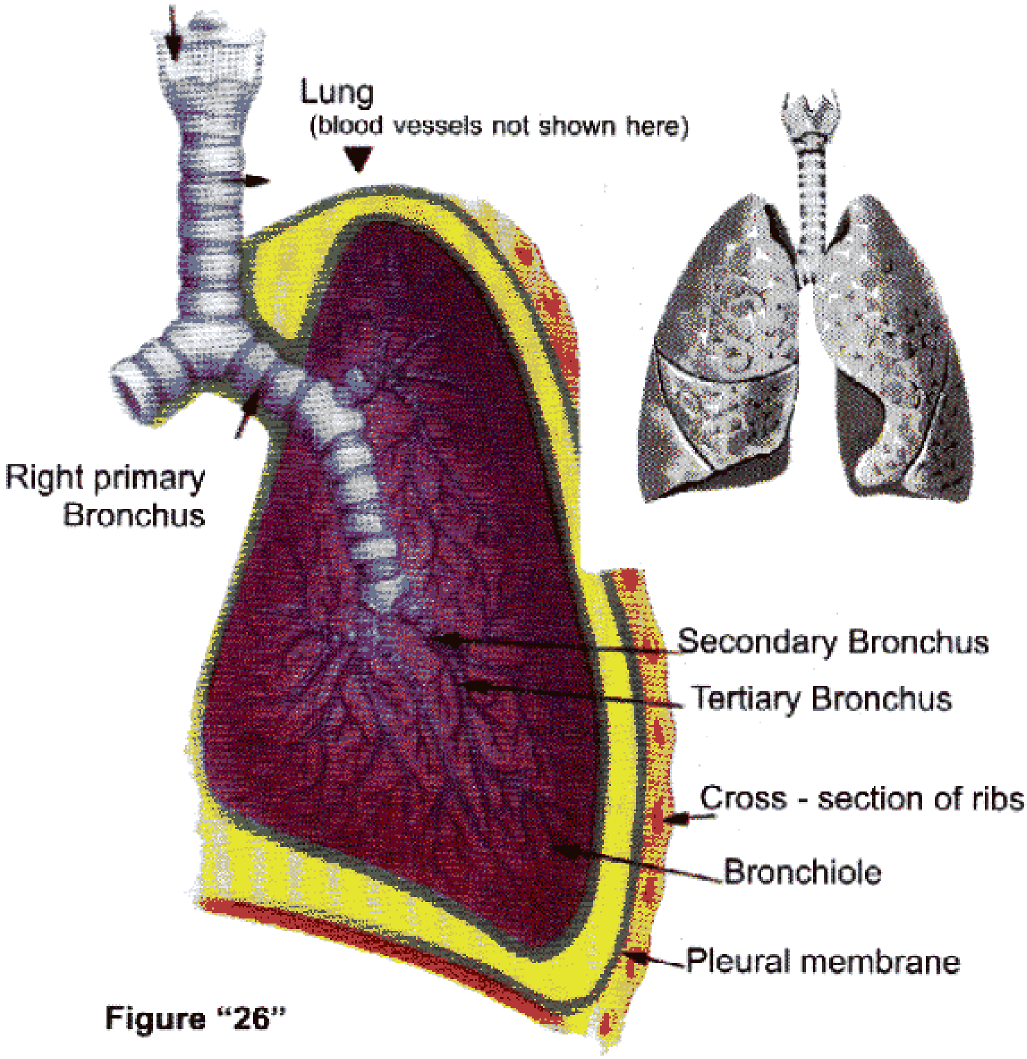

Lung
(blood vessels not shown here)
Right primary Bronchus
Secondary Bronchus
Tertiary Bronchus
Cross - section of ribs
Bronchiole
Pleural membrane

Figure “26”

Bronchial Tubes

Every day a human being breathes 25,000 times, in which he inhales 180 square meters of air, from which 6.5 meters are extracted to be used by the blood.

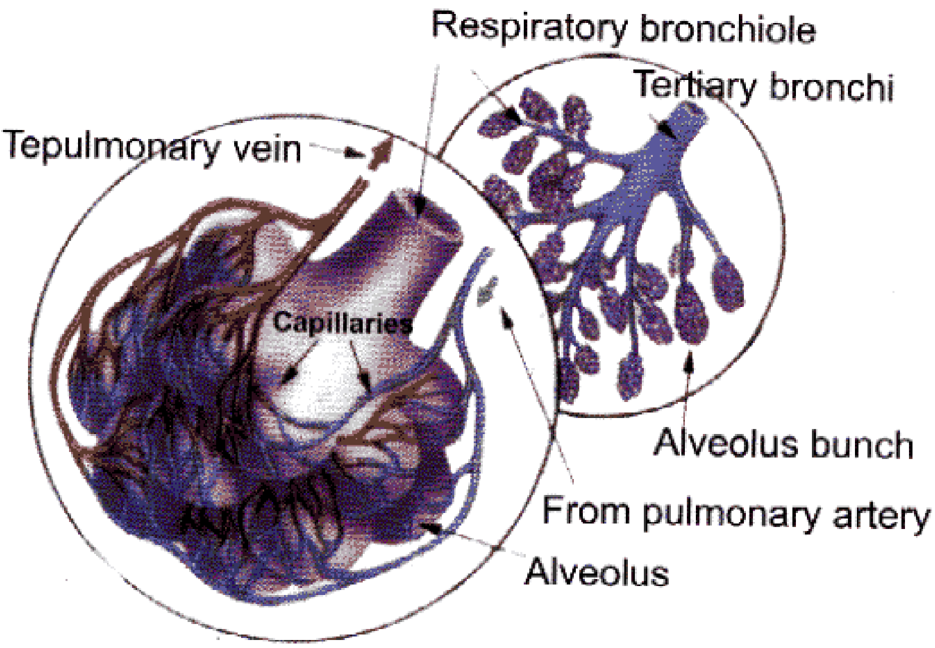

Respiratory bronchiole
Tertiary bronchi
Tepulmonary vein
Capillaries
Alveolus bunch
From pulmonary artery
Alveolus

Figure "27"

Alveoli, the air sacs of the lungs

* The trachea branches into two primary bronchi, and these in turn divide progressively into smaller bronchioles and so on to the level of alveoli, which are about 750 million sacs in the two lungs. Each alveolar sac has a thin wall that connects to a capillary network. Here an exchange of carbon dioxide with oxygen takes place, in which the former is expelled and the latter, a vital substance for the body, is admitted.

* The network of alveoli spreads in an area in excess of 200 square metres to purify the blood. In normal conditions, not more than one tenth of the alveoli are in use at any time, but in crises more alveolar sacs operate.

Children's pain

Consider now the frequent crying of infants, and the great benefit of that. Indeed, physicians and naturalists have confirmed the benefit and advantage of that crying. They say: There is, in infants' brains, a moisture that, if left there, would cause great mischief. Crying causes the flowing of that harmful moisture, which descends then from the brain, and this enhances the brain's strength and ensures its healthy growth. Besides, crying and weeping expands the breathing channels, expands and strengthens blood vessels, and enhances nerves. Many a benefit and much good are realized by the crying that emanates from the infant. If crying, which results from a feeling of undue pain, embodies aspects of wisdom that are unfathomable to you, and may not even occur to you, think then in the same way of the pain that children endure: its causes and beneficial consequences embody such wisdom as would be unperceived by the majority of humans, who are so confused concerning its purpose to the point of clashing among themselves. They are sharply divided concerning that issue.

One group says that the pain of children can only be accounted for by the sheer will of the Lord; that no wisdom or purpose may be identified concerning it. By this attitude, this group has categorically denied itself access to fathoming the issue. Whenever this group is asked about anything related to creation its answer is the same:

لايسأل عما يفعل

"He (i.e. the Lord) is not to be questioned as to what He does" (21: 23). This answer is impeccable, and the purport of it is not to deny the deep judgement that is involved in the Lord's actions, nor to dispute the good that is always served by His actions. The purpose in the above verse is to stress that the Lord has no associate

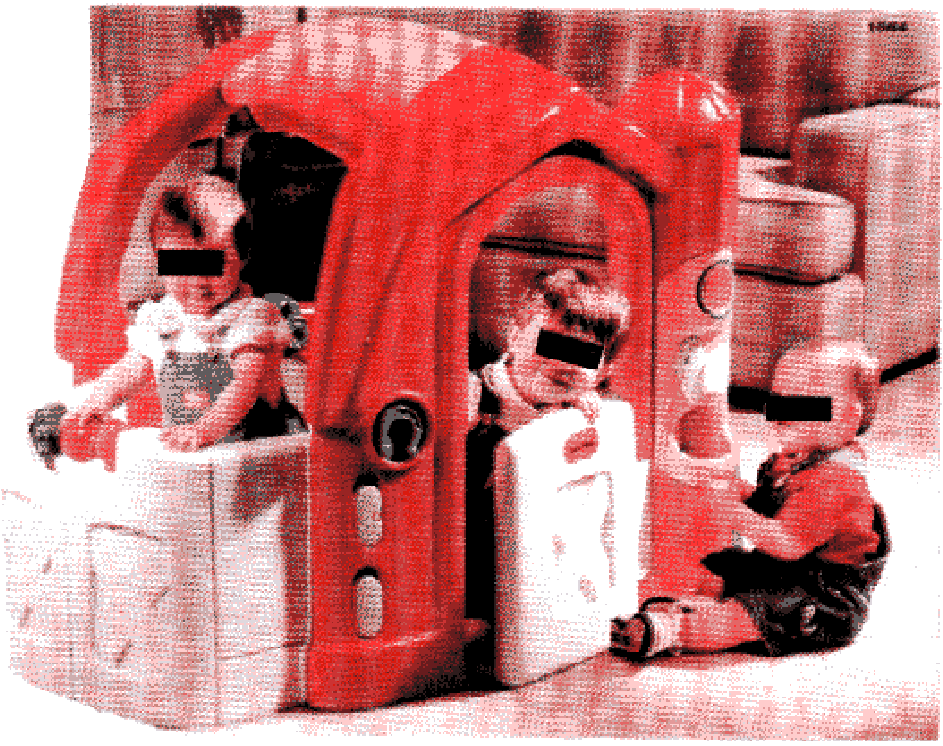


Figure "28"

in His Lordship and Divinity, to assert that there is no limit to His wisdom, no one to contradict His decree, that He may not be questioned, since nothing He creates is done in vain, nor did He create anything from a whim. One would ask about the point of a person's behaviour if he seems to behave senselessly, if his deeds do not reveal purpose or benefit. Do you not see in the following Qur'anic verses:

﴿ أَمِ ٱتَّخَذُوٓا۟ ءَالِهَةً مِّنَ ٱلْأَرْضِ هُمْ يُنشِرُونَ ○ لَوْ كَانَ فِيهِمَآ ءَالِهَةٌ إِلَّا ٱللَّهُ لَفَسَدَتَا فَسُبْحَٰنَ ٱللَّهِ رَبِّ ٱلْعَرْشِ عَمَّا يَصِفُونَ ○ لَا يُسْـَٔلُ عَمَّا يَفْعَلُ وَهُمْ يُسْـَٔلُونَ ﴾

[الأنبياء: ٢١-٢٣]

"Have they chosen gods from the earth who raise the dead? If there were therein gods beside Allah, then verily both the heaven and earth would have been in disorder. Glorified be Allah, the Lord of the Throne, from all that they ascribe unto Him. He will not be questioned as to that which He does, but they will be questioned." (21: 21-23)

How rebuked are those who choose for His equals gods who are actually very unlike him. The verse: 'He will not be questioned as to that which He does' is a confirmation of His divinity, an emphasis of His Lordship and Godship; the phrase: 'but they [i.e. the false gods] will be questioned' denies the legitimacy of attributing godship to those other gods, on the ground that they are accountable before Him, controlled by Him; so how can they be held as His equals, despite the great disparity? This, in fact, is the point of focus of this verse, while the fatalists take it to be a refuge, an excuse to deny His wisdom or not to study His deeds with a view to discovering their objectives and good consequences. But it is Allah who guides to the right road.

Another group has said:

The wisdom of exposing children to hardship is so that they may be compensated in the Hereafter with undiminished recompense. When it is objected to this group that it is possible to extend reward to these people without this pain, they answer: pain mediates in their case in the same way as duties mediate in the case of accountable adults. When it is further objected that the above justification is untenable as pain may be inflicted on the children of unbelievers, they reply: we do not subscribe to the view held by some, namely that those children will enter hell, as no one will enter hell without sins, and these children have no sins counted against them. The same debate is held concerning children and the arguments and counterarguments are put forward, but this is not the right place to recount all that. There have been arguments marshalled against these people to which they have not replied convincingly: the pain inflicted on the children of unbelievers, even if they reached puberty and lived as unbelievers until they died, is definitely no compensation, nor is it a punishment for their disbelief, since punishment may not be inflicted beforehand and ahead of time. They blunder a lot on this point, and their references have conflicting statements; what they say in this respect in not rationally acceptable.

A third group has said:

If you consider this problem you will see that it is pointless, that to try to settle it amounts to taking unnecessary trouble, as those sufferings, their outcome and causes are all a natural accompaniment of human development, that is an inevitable part of human existence, equal in that to heat, cold, hunger, thirst, fatigue, toil, depression, worries, weakness, and infirmity. To ask about the point of suffering is the same as to ask about the need for food when there is hunger, for drink when there is thirst, for rest and sleep when there is fatigue. Those pains are natural accompaniments of human development, unavoidable in the existence of humans and even animals; to dispense with them is to dispense with one's humanity and to be an angel or a different creature. Children's pains do not exceed adults', but since the latter get familiarized with them they may take them lightly. There is a vast difference between a youngster's suffering and an adult's. But both are a part of human nature and a natural result of creation; if a human did not encounter those pains, he would be other than a human. If one observes that a child who is hungry, thirsty, cold or tired suffers in a way that an adult is spared, it should be retorted that the latter has other ailments and diseases that are more or less than the former's suffering of hunger, thirst, cold and heat. It is just that humans, and also animals, have been created like this.

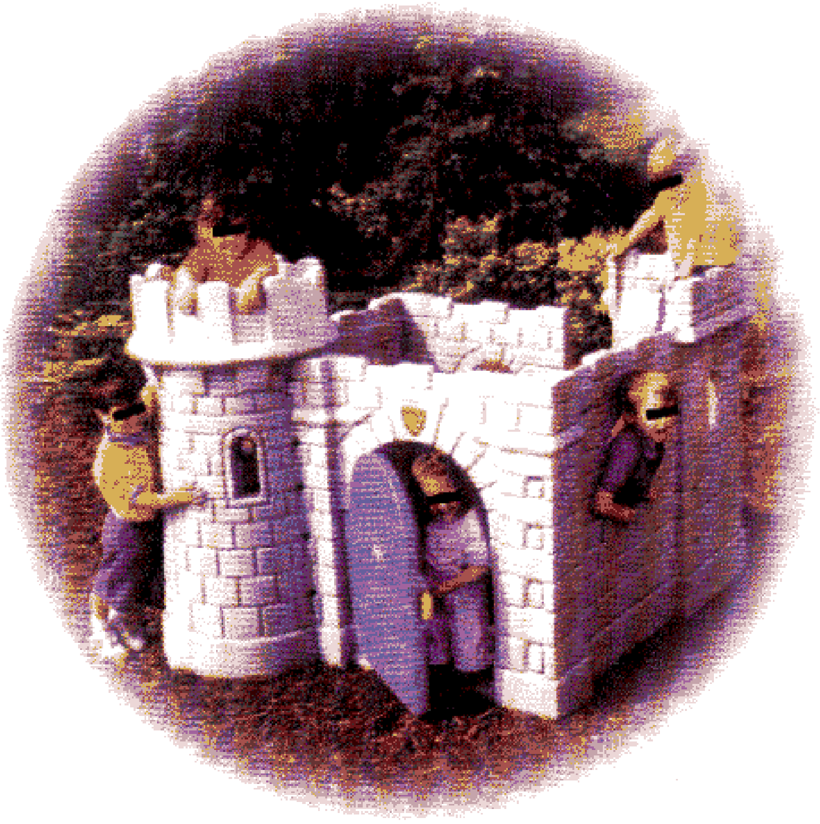


Figure "29"

The causes of ordeals

To the objection that someone may raise: why did He create that? Should He not rather have created his servants not subject to pain? The last-mentioned group answers: this objection is unacceptable, since the Almighty created man of a weak build in a world of test and ordeals, and so he is bound to encounter hardships, and is by nature subject to suffering. The human body has been endowed with the four humours [blood, phlegm, choler and melancholy], which are essential for human life, and man's very being is based on them. These humours are bound to cause interactions, mixings, and minglings, in a way that some of them will be in excess of the others, in quantity at times, and in quality at others. All this will inevitably lead to sufferings; it is pointless to admit the cause and object to the result. Besides, the Lord created in the human being capacities, desires, and the will that cause incessant movement and a pursuit of what is beneficial and a warding off what is harmful, individually at times, and with the assistance of others at other times. Hence, people are in need of each other, and there will be many encounters; and some will oppress others. There is bound to be in consequence suffering and ill-treatment such as that which results from the mixture of the humours and the dominance of some over others. Suffering will never be absent from this world of test and ordeal, in contrast to the world of recompence and eternal bliss. A person who fancies that the qualities adapted to that world should be applied in this is clinging to illusions. Absolute wisdom dictates that in this world blessing should be mixed with crisis, and relaxation with toil, pleasure with suffering, health with disease, happiness with unhappiness. It is the world of test where crises can only be staved off with other crises. This concept has been well and rightly expressed by a poet in the following couplet:

I live in the house of calamity;

Warding off disasters with other disasters.

If you consider eating, drinking, clothing, intercourse, relaxation and all the other pleasures of life you will notice that a human being uses them to ward off their counterparts of suffering and calamities. Do you not see that you ward off the pangs of hunger with eating, the pain of thirst with drinking, the pain of cold and heat with clothing, and so on? It is on this account that some sages have said: the pleasures of this world are for us a staving off of pains and nothing more; real pleasures may be enjoyed in another world and another state. Therefore, those sufferings and pleasures that are unavoidably intertwined in this life are a proof of the hereafter. They prove that the will that decreed the mingling of suffering and pleasure here has beyond doubt willed the existence of another existence where there will be two separate dwellings, one of pure pleasure, unadulterated without any suffering, and one of pure torture, unmitigated without any pleasure, the former being Paradise, and the latter being Hell. Indeed, the pleasure and suffering of this world should lead the human, endowed with innate nature, to ascertain the necessity of Paradise and Hell. Do you not see how you experience proofs and illustrations of them in your own life, and so vividly that you seem to see them with your own eyes? Consider, then, how both actual experience and sense perceptions indicate the sound judgement of the Lord, and the truth of what His Messengers have reported about Paradise and Hell. Observe how, by a consideration of the wisdom of the Almighty, He guides the minds and the innate nature to believe in the truthfulness of the apostles and the soundness of their report of things that the intellect can perceive in general, while the apostles report in detail. This is a far cry from the one whose knowledge leads him to claim the existence of a contradiction between what the messengers have taught and the dictates and evidence of the intellect. But the 'intellects' of such people have been left by the Lord to drift aimlessly and to grope about on their own, and so they were beset with distractions on every side. Reflect on this! It is such sound reasoning and precious enlightenment that not many books will attempt.

The driving forces of the body's organs

Have a fresh look now at yourself, and think of the natural actions that have been bestowed on man, the benefits and wisdom they represent, and the driving force and dynamism of each action[1] . Hunger evokes eating and necessitates it, on account of its being the basis for the nourishment of the body and its life; sleepiness evokes sleep and brings it on, on account of its necessity for the relaxation of the body and the organs and the recovery of abilities and reviving them to their vigour; lust evokes intercourse, which is the means for reproduction, the fulfilment of desire and the gratification of pleasure. These driving forces incite a human to seek the corresponding actions, and they arouse those stimuli involuntarily. This is as it should be, because if a human were given control of those drives, activating them at will, he would often be deflected from them for a while on account of various distractions, and the result would be that his body would grow frail and weak and start to decay without his being aware of it. Likewise, if his body is in need of any medicine or attention but the individual procrastinates and ignores it, the result will be that disease will take hold and lead to the human's perishing. Therefore, it was the mercy of the Gentle, the Knower, that willed that driving forces and stimuli spur him on and constantly remind him to undertake that which ensures his well-being, survival and welfare. Such stimuli come to him without any summoning or signaling on his part. Each action has its own drive which emerges spontaneously, urging him and spurring him on. Observe, too, what various capacities adapted for survival a human has been supplied with: the stimulating force that provokes the seeking of food, perceives what food it requires and gets it, and then passes it on to organs in amounts adapted to their capacity. There are forces that hold food, until such time that it is processed by nature and prepare it adequately for distribution, and then it is dispatched to the right recipients. There is the digestive force that processes the food in the body and metabolises it as it leaves the stomach. There is the excreting force that ejects the useless residue of food, dismissing it and excreting it from the body, lest it should harm the body and destroy it. Consider then, Who provided you with those forces when you badly needed them? Who put them at your service? Who supplied each force with its functions and had each force perform its particular task, unlike any other? If they were antagonistic to each other, they would have annihilated each other's effect. So, Who prevented them from doing that? How would you, without the driving force, have sought to preserve the vitality of the body? How, without the holding force, would the food have moved down the channels to settle in the stomach? How, without the digestive force, would the food have been processed until the nutritious part is extracted and forwarded to the various parts of the body and the farthest extremes of it? How, without the driving force, would the obnoxious and lethal residue (if held too long) have been expelled from the body, bit by bit, relieving the body and unburdening it? Observe how these forces were created to take care of you and keep a watch to preserve your welfare. The body is like the residence of a king, with his servants and attendants serving in it: some he has entrusted with maintaining the residence; some with shopping for the residence and bringing its needs; some with collecting the purchased items, and preparing them for use, and then distributing them to the residents in accordance with their needs; some with sweeping the house, dusting it, and dispensing with rubbish and waste. The king in this case is the King, the True and Manifest King, may He be glorified; the residence is your body; the servants and attendants are your organs and limbs; and they are served by the forces described above.

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[1] Ibn Al-Qayyem, may Allah give him mercy, speaks here of the driving forces and dynamos. Such forces have been diligently investigated by modern science; but while some have been unveiled, most are still a mystery. The endocrine system and the hormones have been put forward to account for such forces: they control various functions in the body, as other systems control other functions. Every system performs its specific role to organise the activities of the body's organs, activating them and alerting them to any hazard and protecting them. The nerves are the major system among these, and the glands are next in importance. Glands are like micro-factories that produce chemicals which they secrete to the body, as for instance they secrete the hormones that run in the body with the circulation of the blood.
The main glands of the body are:
In the head: the lachrymal (tear) glands, the salivary glands, the pineal gland, the pituitary gland (in the neck), the thyroid gland, the parathyroid gland.
In the chest: the thymus, the mammary gland (of women).
In the abdomen: the adrenal glands, the liver, the pancreas, the intestine glands, the ovaries (of women).
In the posterior (of man): the penis glands, the testes.
Each of the above glands have one or more functions, some of which we still do not know, or we do not know their manner of operation, or their effect on the body.

The outlook of the believer versus that of Others

A naturalist's or a physician's perspective of the things we have been discussing above is different from a knowledgeable believer's. The naturalist and physician are concerned with investigating aspects of preserving good health and averting sickness; a believer, on the other hand, contemplates things with a view to discerning proofs in them of their Creator and Maker; His exceeding wisdom, generous liberality and bounty, which He urges His servants to respond to with remembrance and gratitude.

Remembering and forgetting

Consider, then, the wisdom of Almighty Allah in remembering and forgetting, a quality unique to the human species. Reflect on the many services they give, and the benefits that accrue to the human from them. Without the faculty of remembering, bestowed solely on man, there would be a great muddle in all his affairs; he would not distinguish what is due to him from what is his duty; what he received from what he handed out; what he heard from what he saw; what he uttered from what was addressed to him; he would not distinguish his benefactor from his antagonist; he would not recall those who had dealings with him; he would not remember to seek closeness to the one who had done good to him, nor to avoid the one who had done him mischief; he would not find a way that he had tried and found right even after going along it many times; he would not accumulate knowledge in any particular field even if he had devoted all his life to it; he would not benefit from experience, or draw a lesson from what has passed – indeed he would cease to be a member of mankind.

Reflect, then, on the immense blessing of all these benefits. Think of the amount of good each aspect realizes for you, and then how much they represent in their totality! One of the most curious blessings is forgetting: without forgetting a human being would find no consolation for any loss, his grief would be without end;

he could not get over the effect of a disaster; his mourning would be permanent, his malice would be for ever; he would not enjoy any of life's amusements with his mind full of the memory of catastrophes; he would have no hope of the relenting of an adversary, or the abating of the ill-feeling of an envier. Reflect, then, on Allah's bounty in providing you with the ability to remember and forget, despite their antithesis and opposition; each performing its respective part.

" Al-Haya' "

Consider also the trait of "Al-Haya' " (modesty, sense of shame in reverence of Allah or of men) which is uniquely human in contrast with all sub-species. "Al-Haya' " is one of the best, most remarkable and fruitful moral qualities; it is, in fact, the cardinal human trait – any human devoid of this moral quality has no more of the human being than the outer appearance and physique; he has no trace of goodness about him. Without this trait, no hospitality would be shown to a guest, no promise would be honoured, no pledge would be fulfilled, no helpless person would be helped; one would not distinguish goodness from evil, holding the former in high esteem and avoiding the latter; a human would not hide his misdeeds or hold back from a sin. It is true of many people that it is only al-haya' that stimulates them to undertake what they are supposed to do; without it they would not honour anybody's right, would not observe the rights of kinship and would not respect a parent. The stimulus for all these deeds is either religious, expecting a favourable recompense; or worldly, the doer's fear of what other poeple will say. It can be said that without al-haya' (fear of the Creator, or of His creatures) man would cease to do any good.

In support of this, one may refer to the following tradition, reported by Al-Tirmidhee, among others. The Prophet ﷺ said:

«اسْتَحْيُوا مِنَ اللهِ حَقَّ الْحَيَاءِ!» قَالُوا: وَمَا حَقُّ الْحَيَاءِ؟ قَالَ: «أَنْ تَحْفَظَ الرَّأْسَ وَمَا حَوَىٰ، وَالْبَطْنَ وَمَا وَعَىٰ، وَتَذْكُرَ الْمَقَابِرَ وَالْبِلَىٰ».

"Have haya' in respect to Allah in the right sense of haya'!" "And what is haya' in the right sense?" the Sahabah (Companions) asked. He said, "It is to control the head with what it perceives, the belly with what it contains, and to be mindful of the tomb and decay."[2] In another tradition, the Prophet said:

«إِذَا لَمْ تَسْتَحِ فَاصْنَعْ مَا شِئْتَ».

"If you feel no haya' (shame), then you can do anything."[3] This last tradition is best understood in the way Abu Ubaid and the majority understood it, that it is a threat, rather similar to the purpose in the following Qur'anic verse:

﴿ ٱعْمَلُوا۟ مَا شِئْتُمْ ﴾ [فصلت: ٤٠]

"Do what you will," (41: 40); or the other verse:

﴿ كُلُوا۟ وَتَمَتَّعُوا۟ قَلِيلًا ﴾ [المرسلات: ٤٦]

"Eat and take your ease on earth a little." (77: 46)

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[2] Reported by Ahmad, Al-Tirmidhee and Al-Hakim; the last said about the line of reporters: authentic, which was corroborated by Al-Dhahabee. Al-Baihaqee reported it in his: "Shu'ab Al-Eeman". Al-Albanee rated the tradition as 'good', in: Saheeh Al-Jame' (I/318)

[3] Reported by Al-Bukharee (10/523), by Al-Baghawee in Sharh Al-Sunnah, by Ahmad (4/121), and Al-Baihaqee in "Al-Sunan Al-Kubra".

According to others, the above tradition is a permission and allowance, in the sense that if you feel inclined to do something, then think before you embark on it: if it is such that you would feel afraid of Allah or of people when doing it, then do not do it; and if it does not cause you to feel haya', do it, for it is not a sinful deed.

In my opinion, the above tradition is grammatically in the form of a demand; its real meaning is factual, rather similar to the common saying that he who has no haya' (sense of shame) will do what he desires: it is not a permission or a direct threat. It has the effect of presenting a fact; it says that the deterrent to bad behaviour is only haya', while a person who has no haya' will do what he likes. The sense has been expressed in the form of a fact for a very curious reason, that a human has two commanders and prohibitors, a commander and prohibitor on behalf of haya', which, if he obeys, it would make him abstain from doing all that he desires; and another commander and prohibitor on behalf of desire and nature. A person who fails to obey the commander and prohibitor representing haya' will invariably obey the commander and prohibitor representing desire and caprice. By using the imperative, the above meaning is included, unlike the saying: "If you feel no haya', then you can do whatever you desire."

Good expression

Consider now Allah's mercy in endowing man with the two forms of expression, the oral and the orthographic. They have been stressed by the Almighty in the course of listing His graces to man. We can see this in the opening verses of the first surah revealed to the Messenger of Allah, ﷺ:

﴿ ٱقْرَأْ بِٱسْمِ رَبِّكَ ٱلَّذِى خَلَقَ ○ خَلَقَ ٱلْإِنسَـٰنَ مِنْ عَلَقٍ ○ ٱقْرَأْ وَرَبُّكَ ٱلْأَكْرَمُ ○ ٱلَّذِى عَلَّمَ بِٱلْقَلَمِ
○ عَلَّمَ ٱلْإِنسَـٰنَ مَا لَمْ يَعْلَمْ ﴾ [العلق: ١-٥]

"Read in the name of thy Sustainer, who has created – created man out of a germ-cell! Read – for thy Sustainer is the Most Bountiful One, who has taught man the use of the pen – taught man what he did not know!" (96: 1-5)

See how Allah condenses in the above verses all the phases of creation; how the verses describe most concisely, coherently and beautifully the four levels of existence. He starts with creation in general, which is the conferring of external existence; then, since man is the target of attention here, He turns to the uniqueness of the creation of man to point out the significance of the creation, which, He emphasizes, is wondrous. By just considering his own creation, man can observe the many aspects of Allah's bounties. In this place, the Qur'anic text only mentions the development of the human from a clot, while in other contexts it mentions the stages that preceded it. The first matter from which the creation of man was started is earth and mud, or 'sounding clay'. In some other locations in the Qur'an, however, another material of creation is stressed, the liquid of little worth (i.e. semen). The Qur'an mentions here the first stage of formation, the clot. Prior to this, there is the drop of semen, which directly leads to the clot.

In the present context, a third phase is mentioned, teaching by the pen, one of the greatest blessings bestowed by the Lord on His servants, since it is the means for preserving sciences, confirming rights, transmitting teachings, recording witnesses, and reckoning the accounts of dealings among people. It is by means of writing that knowledge about ancestors is preserved for their progeny. Without writing, the events of bygone periods would be inaccessible to a later period, traditions would fade away, rulings would become confused, and the succeeding generations would be ignorant of the convictions of their ancestors; the major hurdle to efficiency in people's worldly and religious affairs would be oblivion, which blots out the items of knowledge from their minds. Writing is the vehicle that preserves knowledge from being lost, in the same way that cabinets preserve possessions from getting lost. Next to the Qur'an, writing is one of the most valuable of Allah's blessings. Although acquiring knowledge by the pen is realized by intelligence and skill, the means by which this is made possible (i.e. writing) is a sheer blessing freely conferred by Allah, a free grant from Him and an additional bounty that raises man's capability. It is the Lord who taught man reading and writing, notwithstanding man's effort to learn. Man's act of learning is in response to the Teacher who taught by means of the pen; He taught man, and man learned, rather in the same way as He taught man speech, and he spoke.

Besides, Who gave man the mental power that enables him to perceive incoming messages, the tongue that expresses what he desires to state, the fingers that commit it to paper? Who provided his mind with the ability to acquire knowledge, an ability that all other animals were denied? Who enabled man's tongue to make utterances and his fingers to make dexterous movements? Who supported the fingers with the hand, the hand with the arm? Many a sign of Allah's teaching with the pen do we pass by heedlessly!

On writing

Let us dwell for a while on the case of writing! Consider yourself, how you hold the pen, an inanimate object, apply it to the paper, another inanimate object, and from the meeting of the two objects emerge all sorts of wisdom and all branches of knowledge, the great variety of correspondence, sermons, prose and verse and treatises on specific issues. Who, then, caused ideas to occur to your mind in a flux, and impressed them on your memory? Who caused the utterances that represent those ideas to run along your tongue, then to be inscribed with a movement of your fingers? It is an amazing inscription that emerges there, implying even more spectacular wonders than its visible form; it enables you to fulfill your wishes, to represent what you conceive in the depths of your mind, and transmit it to far off lands and various territories; it functions there as your emissary, representing what you have to say; it announces what your tongue would announce, plays the part of your messenger, often more effectively than a human messenger. Who but He has taught with the pen, taught man what he did not know?

Teaching by the pen implies all three levels of existence: the levels of mental existence, verbal existence and orthographic existence. Teaching by means of the pen is an indication that the Almighty is the One who bestows those levels; the word 'created' in the above verses is an indication that Allah bestows material existence. In a most concise, effective and eloquent way, the above verses assert that all levels of existence are attributed to the Almighty, in creation and in teaching. He mentioned two creations and two acts of teaching, a general creation and a special creation, a general teaching and a special teaching. He also mentioned here, referring to Himself, the attribute 'Akram' (the most generous, the noblest, the most perfect) which implies all good and perfection: all perfection belongs to Him as an attribute, and all good proceeds from him as action; He is the 'Akram' in Himself, in His attributes, and in His actions. The creation and teaching mentioned here are attributable to His generosity, liberality, and bounty; they do not proceed from any necessity that requires them: He is the Rich, the One deserving thanks.

If we consider another group of verses:

﴿ٱلرَّحْمَٰنُ ○ عَلَّمَ ٱلْقُرْءَانَ ○ خَلَقَ ٱلْإِنسَٰنَ ○ عَلَّمَهُ ٱلْبَيَانَ﴾ [الرحمن: ١-٤]

"The Beneficent has made known the Qur'an. He has created man, He has taught utterance," (55: 1-4), we find that they denote that the Almighty has conferred all levels of existence. When He says: "created man", He is describing the bringing into existence in the external, concrete sense; and here, as mentioned above, the focus is on man. The expression "made known the Qur'an", is a statement about the endowment of mental-intellectual existence. Man only learnt the Qur'an by being taught, in the same way that he was man by being created as man: it is He who created him, and taught him. The next verse says: "taught utterance". Utterance (or expression) covers three levels of existence, each of which is called expression. One is mental expression, where information is conceived; the second is verbal expression, where this information is encoded and represented to others; and the third is orthographic visible expression, in which the uttered expressions are given a graphic shape, so that one can decode the sense by looking at the inscriptions, in the same way that a hearer perceives the sense by listening to sounds; the former addresses sight, the latter addresses hearing, and the mental expression addresses the mind. These three levels are often mentioned together in the Qur'an, as you see in the following verses:

﴿إِنَّ ٱلسَّمْعَ وَٱلْبَصَرَ وَٱلْفُؤَادَ كُلُّ أُو۟لَٰٓئِكَ كَانَ عَنْهُ مَسْـُٔولًا﴾ [الإسراء: ٣٦]

"The hearing and the sight and the heart – of each of these it will be asked." (17: 36)

﴿وَٱللَّهُ أَخْرَجَكُم مِّنۢ بُطُونِ أُمَّهَٰتِكُمْ لَا تَعْلَمُونَ شَيْـًٔا وَجَعَلَ لَكُمُ ٱلسَّمْعَ
وَٱلْأَبْصَٰرَ وَٱلْأَفْـِٔدَةَ ۙ لَعَلَّكُمْ تَشْكُرُونَ﴾ [النحل: ٧٨]

"And Allah brought you forth from the wombs of your mothers knowing nothing, and gave you hearing and sight and hearts that haply ye might give thanks." (16: 78)

In other places in the Qur'an, the Almighty rebukes those who fail to benefit from these channels to attain to right guidance and beneficial knowledge. For example, in (2: 18)

﴿ صُمٌّ بُكْمٌ عُمْيٌ فَهُمْ لَا يَرْجِعُونَ ﴾ [البقرة : ١٨]

"They are deaf, dumb and blind, so they return not.(to the right path)."

Also see (2:7):

﴿ خَتَمَ ٱللَّهُ عَلَىٰ قُلُوبِهِمْ وَعَلَىٰ سَمْعِهِمْ وَعَلَىٰٓ أَبْصَٰرِهِمْ غِشَٰوَةٌ ﴾ [البقرة : ٧]

"Allah hath sealed their hearing and their hearts, and on their eyes there is a covering. Theirs will be an awful doom."

This, however, has already been discussed in detail.

Knowledge and ignorance

Reflect on the wisdom of the Gentle, the Omniscient, when He endowed man with such knowledge as he may need for optimal life in this world and in the hereafter; while He withheld from man knowledge that he does not need, and which there is no harm in missing. He greatly facilitated the means of acquiring the required knowledge; the more that was required, the more did He facilitate its acquisition. He bestowed on man knowledge of and recognition of his Creator, Maker, Originator, the Almighty Lord – the way to such knowledge has been greatly smoothed. There is nothing in the branches of knowledge that compares with this in importance, nor with its obviousness to the mind and innate nature; no branch of knowledge has as many ways and proofs as this knowledge, nothing is equal in obviousness and clarity – all that your eye sees, all that your ear hears, all that your mind thinks of, all that occurs to you, and all that any of your senses receive, is a proof of the Lord. The ways to knowing the Maker are innate and self-evident, so that nothing in the branches of knowledge is as manifest as this knowledge. The most compelling of proofs falls short of the fact it tries to prove. That is the reason the messengers of Allah used to say to their people: "Is there any doubt about Allah?" They addressed them in a tone that meant there should be no doubt whatsoever about the existence of Allah Almighty. He established proofs about His existence, Oneness, the attributes of His perfection of such abundance that no one but Allah can list all their variety or number; then He implanted that in the innate nature, and ingrained it in the mind in a general way; then He sent His messengers to remind people of Him. We find a support of that in the following verses from the Qur'an:

﴿ وَذَكِّرْ فَإِنَّ ٱلذِّكْرَىٰ تَنفَعُ ٱلْمُؤْمِنِينَ ﴾ [الذاريات : ٥٥]

"And warn, for warning profits believers," (51: 55);

﴿ فَذَكِّرْ إِن نَّفَعَتِ ٱلذِّكْرَىٰ ﴾ [الأعلى : ٩]

"Therefore remind men, for of use is the reminder," (87: 9);

﴿ فَذَكِّرْ إِنَّمَآ أَنتَ مُذَكِّرٌ ﴾ [الغاشية : ٢١]

"Remind them, for thou art but a reminder," (88: 21);

﴿ فَمَا لَهُمْ عَنِ ٱلتَّذْكِرَةِ مُعْرِضِينَ ﴾ [المدثر : ٤٩]

"Why now turn they away from the admonishment," (74: 49);

and many others. The messengers also elaborated what innate nature and the mind know to be true in general. See how the innate nature has ingrained in it the assertion of the Lord's existence, His Oneness, the attributes of His Perfection, Highness, and Wisdom as embodied in His creation and injunctions, which assert the truth of His messenger's message, and the compensation for the righteous with becoming reward, and the fitting punishment for the wrong-doer. If the innate nature were preserved in its original state which it had when created, if it had not been exposed to influences that contaminated it and corrupted it and diverted it from what it was made to be, it would have confirmed the Lord's Oneness, the necessity of thanking Him and obeying Him, His attributes and Wisdom as embodied in His actions, and the belief in reward and punishment. But because it was corrupted and diverted from the way it was created, it denied things and rejected things. This is why Allah sent His messengers as reminders that appeal to those with uncorrupted and undistorted innate natures. These people responded willingly, of their own volition, passionately and heartily, heeding to the evidence they found in their hearts: indeed some did not even ask for miracles and supernatural evidence; they rather perceived the truth of the call from its content; this alone was sufficient to make them sure of its being a truthful call; being its proof in itself. The messengers also demonstrated their honesty and refuted the claims of those with corrupted innate natures, so that the latter should not complain to Allah that He did not send them guidance and illumination. These latter have been warned, and the proof of their being in the wrong has been established, so that when Allah tortures them and condemns them, He will not have been unjust to them. This is the purport of the following verses from the Qur'an:

﴿وَمَا عَلَّمْنَٰهُ ٱلشِّعْرَ وَمَا يَنۢبَغِى لَهُۥٓ إِنْ هُوَ إِلَّا ذِكْرٌ وَقُرْءَانٌ مُّبِينٌ ○ لِّيُنذِرَ مَن كَانَ حَيًّا وَيَحِقَّ ٱلْقَوْلُ عَلَى ٱلْكَٰفِرِينَ﴾ [يس: ٦٩، ٧٠]

"And We have not taught him (Muhammad) poetry, nor is it meet for him. This is naught else than a Reminder and a Lecture making plain, to warn whosoever liveth, and that the word may be fulfilled against the disbelievers." (36: 69-70)

Reflect, then, how the knowledge about Allah, the testification of His Oneness, the affirmation of His Names and Attributes, the message of His messengers and the resurrection have been shown to be ingrained in the innate nature, although man is often unaware of that. When the messengers called his attention and alerted him, they enabled man to notice that what they told him was in fact well-established in his innate nature, that his mind, and even his senses, and his whole being testify to it. This is the utmost that belief can achieve, the level of belief described in the Qur'an as dwelling in the hearts of Allah's friends and intimates, as you can see in the following verse:

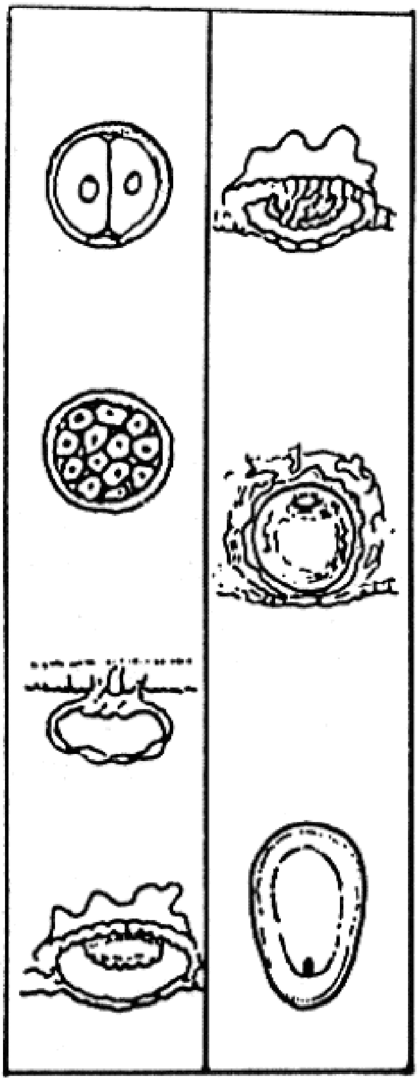
﴿أُو۟لَٰٓئِكَ كَتَبَ فِى قُلُوبِهِمُ ٱلْإِيمَٰنَ﴾ [المجادلة: ٢٢]

"As for such, He has written faith upon their hearts and has strengthened them with a spirit from Him." (58: 22)

Study again, then, the above chapter, as it is among the treasures of this book; it is worth hoarding and dwelling upon. May Allah be thanked; all good is from Him.

The stages of the creation of a human in the mother's womb

End of week one: A male's sperm unites, in the fallopian tube, with a woman's ovum, or egg, resulting in one cell, ready for division and multiplication. It divides into many cells while travelling down to the uterine wall, where it becomes embedded in the uterine wall in the same way that some wild plants cling to a wall. This stage is described in the Qur'an with the following words:



﴿ ثُمَّ خَلَقْنَا ٱلنُّطْفَةَ عَلَقَةً ﴾ [المؤمنون: ١٤]

"Then fashioned We the drop a clot." (23: 14)

End of week two: This lump, the first cells, is divided internally, for -ming three specialized parts: 1) the blood cycle of the placenta; 2) the embr- yonic disc; 3) the fluid in which the embryo swims. About this, the Almighty says in the Qur'an:

﴿ فَخَلَقْنَا ٱلْعَلَقَةَ مُضْغَةً ﴾

"then fashioned We the clot a little lump." (23: 14) The embryo is not visible yet to the naked eye.

End of week three: The embryonic disc divides into three germ layers:

The outer germ layer (ectoderm) from which Almighty Allah creates:

a) Surface organs:

The skin, the hair, the nails, the skin glands, the milk glands, the anterior lobe of the pituitary gland, the enamel of the teeth, the inner ear, the eye lens.

b) Nervous organs:

Sensitive cranial nodes and nerves, the kernel of the adrenal glands, the pigment cells, the cartilage of the limbs, the central nervous system, the retina, the posterior part of the pineal gland.

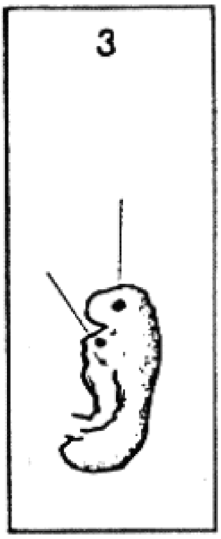
The middle germ layer (mesoderm), from which Almighty Allah creates:

The connective tissue, the muscles of the internal organs of the body and the extremities, the outer membrane of the lungs, the membrane of the heart, the membranes of the intestine, blood cells, the blood circulation system, the lymph system, the spleen, the outer part of the adrenal glands, the urinary-reproductive system, the reproductive organs, with the related ducts and glands, the skeletal muscles, the skeleton, excluding the skull.

The inner germ layer (the endoderm), from which Almighty Allah creates:

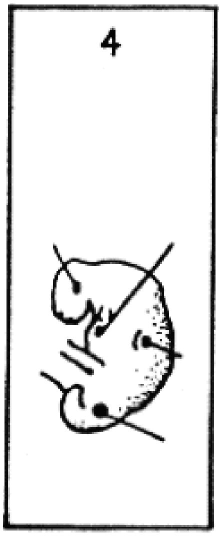
The lining of the trachea, the air bronchioles, the endothelial cells of the digestive system, the liver, the pancreas, the bladder, the columnar cells of the pharynx (throat), the thyroid gland, the eardrum cavity, the tube connecting the larynx to the eardrum cavity, the tonsils, the parathyroid glands.

By the end of this week, the brain has formed, the spinal cord has spread, the thyroid gland has begun to form, the tubes of the heart have begun to fill, and side protrusions, called the body bits, have begun to emerge, (see figure). In this connection, we may cite the Qur'anic verse:



﴿ فَخَلَقْنَا ٱلْمُضْغَةَ عِظَٰمًا فَكَسَوْنَا
ٱلْعِظَٰمَ لَحْمًا﴾ [المؤمنون: ١٤]

"Then fashioned We the little lump bones, then clothed the bones with flesh." (23: 14)



End of week four:

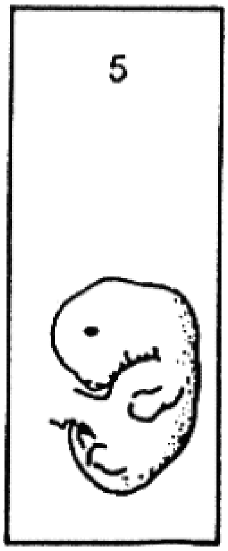
The neural folds merge

Eye and ear buds begin to appear

Buds of the upper limbs begin to appear

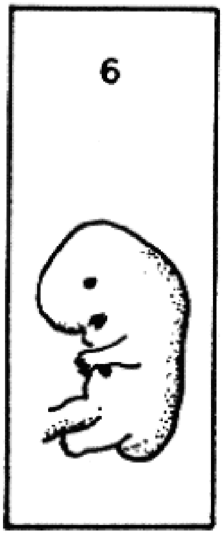
The embryo is now 4 mm long (equal to a rice grain)

End of week five



- Cavities of the eyes appear
- Ear buds appear
- The nose bud appears
- The outline of the mouth appears
- The palm of the hand palm has appeared, but without the fingers
- The head seems to be larger than the trunk
- Cerebral vessels have formed
- Buds of legs have appeared
- The embryo is now 8 mm long (equal to a water melon seed)

End of week six



- The openings for the mouth and the nose are still unseparated
- The foot has appeared, but without the toes
- The upper lip has formed
- The bending at the elbow is seen
- The lines of the fingers are visible
- On day forty-two the embryo is approximately 1.3 cm.

Describing some of these stages, the Prophet ﷺ, says:

«إِذَا مَرَّ بِالنُّطْفَةِ اثْنَتَانِ وَأَرْبَعُونَ لَيْلَةً بَعَثَ اللهُ إِلَيْهَا مَلَكًا فَصَوَّرَهَا، وَخَلَقَ
سَمْعَهَا وَبَصَرَهَا وَجِلْدَهَا وَلَحْمَهَا وَعِظَامَهَا، ثُمَّ قَالَ: يَارَبِّ أَذَكَرٌ أَمْ
أُنْثَىٰ؟ فَيَقْضِي رَبُّكَ مَا شَاءَ، وَيَكْتُبُ الْمَلَكُ».

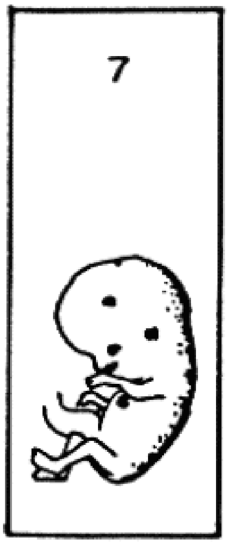
"After an embryo is forty-two days old, Allah sends an angel to it, who shapes it, forming its hearing, sight, skin, flesh and bones. Then he says: "O my Lord! Shall it be male or female? The Lord utters His judgement, and the angel writes it down." (Reported by Muslim)

In the Qur'an, we read the following about the embryo at this stage:

﴿ثُمَّ أَنشَأْنَٰهُ خَلْقًا ءَاخَرَ فَتَبَارَكَ ٱللَّهُ أَحْسَنُ ٱلْخَٰلِقِينَ﴾ [المؤمنون: ١٤]

"and then [We] produced it as another creation. So blessed be Allah, the Best of Creators!"(23: 14)

End of week seven



The reproductive system appears, but at this stage it is not clear whether it is a male or a female.

- The trunk is longer and straighter

- The embryo is 1.8 cm

By weeks eight, nine and ten the reproductive organs of male and female are very clearly distinguished

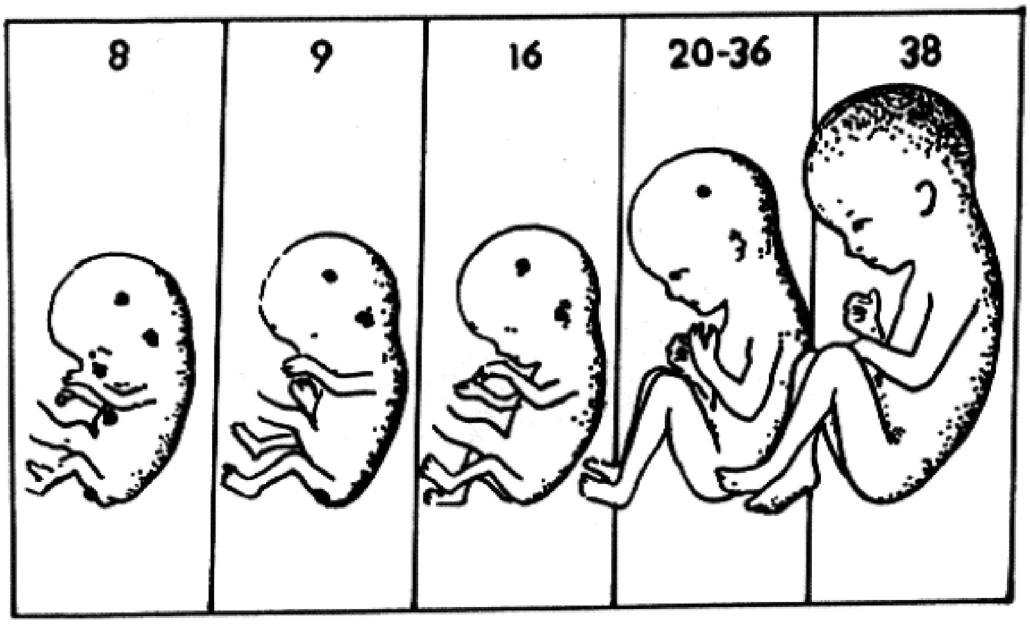
The embryo is now about 6 cm

After week ten the embryo only grows, because its formation is complete.

In this connection, it is appropriate to refer to the following verse from the Qur'an:

﴿ ٱللَّهُ يَعْلَمُ مَا تَحْمِلُ كُلُّ أُنثَىٰ وَمَا تَغِيضُ ٱلْأَرْحَامُ وَمَا تَزْدَادُ ۖ وَكُلُّ شَيْءٍ عِندَهُۥ بِمِقْدَارٍ ﴾ [الرعد : ٨]

"Allah knows that which every female bears and that which the wombs absorb and that which they grow. And everything with Him is measured." (13: 8)



Chapter Two

The Universe

The Almighty says in the Qur'an:

﴿ ءَأَنتُمۡ أَشَدُّ خَلۡقًا أَمِ ٱلسَّمَآءُۚ بَنَىٰهَا ○ رَفَعَ سَمۡكَهَا فَسَوَّىٰهَا ﴾

[النازعات: ٢٧، ٢٨]

"Are ye the harder to create, or is the heaven that He built? He raised the height thereof and perfected it."

Al-Qur'an (79:27,28)

Heaven and the genesis of planets

The Almighty says in the Qur'an:

﴿ ثُمَّ ٱسْتَوَىٰٓ إِلَى ٱلسَّمَآءِ وَهِىَ دُخَانٌ فَقَالَ لَهَا وَلِلْأَرْضِ ٱئْتِيَا طَوْعًا أَوْ كَرْهًا قَالَتَآ أَتَيْنَا
طَآئِعِينَ ﴾ [فصلت: ١١]

"Then turned He to the heaven when it was smoke, and said unto it and unto the earth: Come both of you, willingly or loth. They said: we come, obedient."

Al-Qur'an (41: 11)

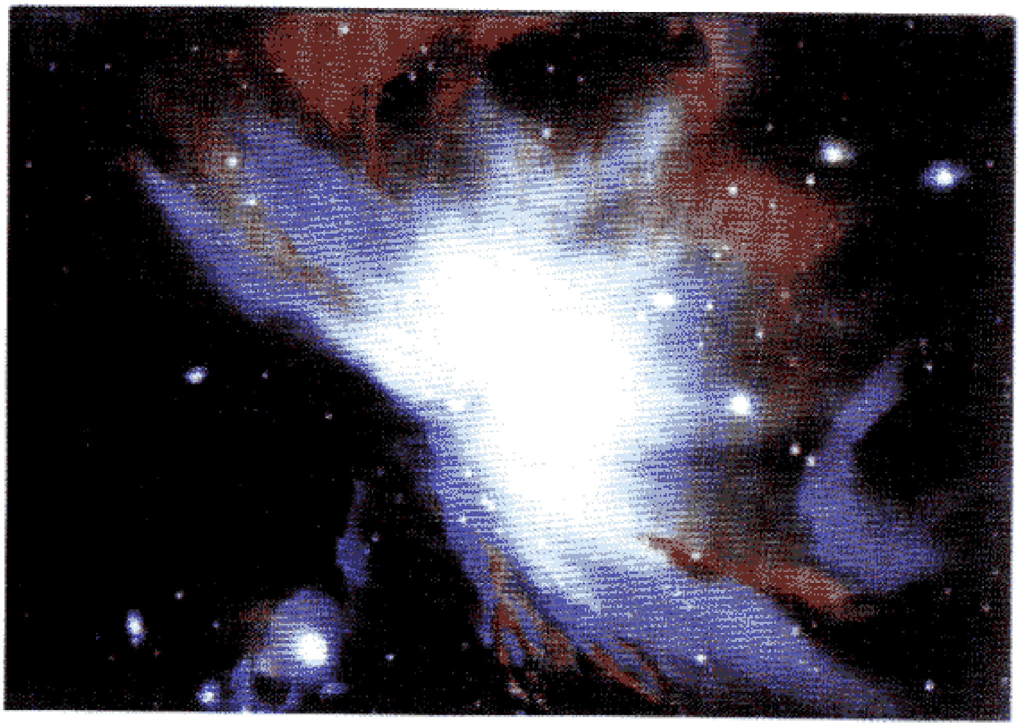


Figure "37"

* Astronomers say that the bodies of the sky, the stars and the planets, were originally a hazy matter, called a nebula. Even now, stars consist of this matter, and the nebula consists of light gases in which are suspended tiny particles of solid matter, making up a dark mass. This tallies with the Qur'anic word, 'smoke', mentioned in the above verse.

Moving planets

Ibn Al-Qayyem says:

Consider then the handiwork of Allah in creating the heavens, their loftiness, roundness, and vastness; the excellence of their structure; the wonders of the sun, the moon, and planets; their dimensions and shapes; the variety of their risings and settings. No atom separates from a mass without there being wisdom in it. The heavens are more splendid in their structure and in the subtlety of their building than man's body; all the wonders of the earth are little compared to those of the heavens. Let us read about that in the Noble Qur'an:

﴿ ءَأَنتُمۡ أَشَدُّ خَلۡقًا أَمِ ٱلسَّمَآءُۚ بَنَىٰهَا ۝ رَفَعَ سَمۡكَهَا فَسَوَّىٰهَا ﴾ [النازعات: ٢٧، ٢٨]

"Are ye the harder to create, or is the heaven that He built? He raised the height thereof and ordered it." (79: 27-28)

﴿ إِنَّ فِي خَلۡقِ ٱلسَّمَٰوَٰتِ وَٱلۡأَرۡضِ وَٱخۡتِلَٰفِ ٱلَّيۡلِ وَٱلنَّهَارِ وَٱلۡفُلۡكِ ٱلَّتِي تَجۡرِي فِي ٱلۡبَحۡرِ بِمَا يَنفَعُ ٱلنَّاسَ وَمَآ أَنزَلَ ٱللَّهُ مِنَ ٱلسَّمَآءِ مِن مَّآءٖ فَأَحۡيَا بِهِ ٱلۡأَرۡضَ بَعۡدَ مَوۡتِهَا وَبَثَّ فِيهَا مِن كُلِّ دَآبَّةٖ وَتَصۡرِيفِ ٱلرِّيَٰحِ وَٱلسَّحَابِ ٱلۡمُسَخَّرِ بَيۡنَ ٱلسَّمَآءِ وَٱلۡأَرۡضِ لَأٓيَٰتٖ لِّقَوۡمٖ يَعۡقِلُونَ ﴾ [البقرة: ١٦٤]

"Lo! in the creation of the heaven and the earth, and the difference of night and day, and the ships which run upon the sea with that which is of use to men, and the water which Allah sends down from the sky, thereby reviving the earth after its death, and dispersing all kinds of beasts therein, and in the ordinance of the winds, and the clouds obedient between heaven and earth, are signs of Allah's sovereignty for people who have sense." (2: 164)

In the above verse He gives priority to the heavens. This occurs again in another verse:

﴿ إِنَّ فِي خَلۡقِ ٱلسَّمَٰوَٰتِ وَٱلۡأَرۡضِ وَٱخۡتِلَٰفِ ٱلَّيۡلِ وَٱلنَّهَارِ لَأٓيَٰتٖ لِّأُوْلِي ٱلۡأَلۡبَٰبِ ﴾
[آل عمران : ١٩٠]

"Lo! In the creation of the heavens and the earth and in the difference of the night and day are tokens of His sovereignty for men of understanding." (3: 190)

Verses like the above abound in the Qur'an. The entire volume of the earth, the oceans, the atmosphere and all beneath the heavens is, when compared to the heavens themselves, like a drop of water compared to the volume of the sea. Hence, mention of the heavens throughout the Qur'an occurs again and again, their vastness and enormity; swearing by them, calling men to contemplate them, or guiding them to find in the heavens evidence of the majesty of their Builder and Raiser; or referring to their creation to prove the Qur'an's description of the hereafter and resurrection; the Lord may mention His controlling of the heavens to confirm His Oneness, that He is Allah, beside Whom there is no god, or may refer to their splendour, compactness, and the integration of their parts, without any rifts, to assert the perfection of His wisdom and ability. The Qur'an also often mentions the planets, the sun, the moon, and all the wonders of their creation, of which men can but discern a small part. Time and again, the Qur'an would swear by these bodies, such as in the following verses:

﴿ وَٱلسَّمَآءِ ذَاتِ ٱلۡبُرُوجِ ﴾ [البروج : ١]

"By the heaven, holding mansions of the stars;"(85: 1)

﴿وَٱلسَّمَآءِ وَٱلطَّارِقِ﴾ [الطارق : ١]

"By the heaven and the morning star!" (86: 1)

﴿وَٱلسَّمَآءِ وَمَا بَنَىٰهَا﴾ [الشمس : ٥]

"And [by] the heaven and Him Who built it;" (91: 5)

﴿وَٱلشَّمْسِ وَضُحَىٰهَا﴾ [الشمس : ١]

"By the sun and his brightness;" (91: 1)

﴿وَٱلنَّجْمِ إِذَا هَوَىٰ﴾ [النجم : ١]

"By the star when it sets;" (53: 1)

﴿فَلَآ أُقْسِمُ بِٱلْخُنَّسِ﴾ [التكوير : ١٥]

"O, but I swear by the planets;" (81: 15).

The last-mentioned are the planets which are partly hidden at rising, racing along their orbits at their zenith, and then moving towards their setting; so the Qur'an swears by them in all three phases. No other creation of the Lord's is more used to swear by than the heaven, the stars, the sun and the moon. When the Almighty swears by any of His creations, he does that on account of the significance and wonder that object represents, pointing to the Lord's power. The more remarkable and compelling as a sign, the more a particular creation is used as an object of oath in comparison with other creations. The wording of the oath will also be emphatic in this case, as we can see in the following verses:

﴿فَلَآ أُقْسِمُ بِمَوَٰقِعِ ٱلنُّجُومِ ۝ وَإِنَّهُۥ لَقَسَمٌ لَّوْ تَعْلَمُونَ عَظِيمٌ﴾

[الواقعة : ٧٥، ٧٦]

"Nay, I swear by the places of the stars – And lo! that verily is a tremendous oath, if ye knew – " (56: 75)

The word planets, 'nujoom', in the above verses means most likely the stars in the sky, rather than the verses of the Qur'an, as some claim, because this is the sense that naturally comes to mind when the word is mentioned, and because the word 'nujoom' is never in the Qur'anic style used in reference to the verses of the Qur'an, not even once. So, there is good reason to take the word to refer to the 'location of stars', especially as the word 'nujoom' has been used to refer to planets throughout the Qur'an; and identical oaths are used, when the Qur'an swears by the setting of the star, in the following verse:

﴿وَٱلنَّجۡمِ إِذَا هَوَىٰ﴾ [النجم : ١]

"By the star when it sets," (53: 1).

The exegesis we have chosen is in fact that accepted by the majority of exegesists. Besides, the Lord swears by the Qur'an itself, not by the way it is conveyed to Allah's servants, as may be seen in the following verses, among others:

﴿صٓۚ وَٱلۡقُرۡءَانِ ذِي ٱلذِّكۡرِ﴾ [ص : ١]

"Sad. By the renowned Qur'an," (38: 1);

﴿يسٓ ۝ وَٱلۡقُرۡءَانِ ٱلۡحَكِيمِ﴾ [يس : ١، ٢]

"Ya Sin. By the wise Qur'an," (36: 1-2);

﴿قٓۚ وَٱلۡقُرۡءَانِ ٱلۡمَجِيدِ﴾ [ق : ١]

"Qaf. By the glorious Qur'an," (50: 1)

﴿حمٓ ۝ وَٱلۡكِتَٰبِ ٱلۡمُبِينِ﴾ [الزخرف : ١، ٢]

"Ha Mim! By the Scripture which makes plain," (43: 1-2);

To conclude, the Almighty uses certain creations of His as signs that speak of His Lordship and Oneness.

I swear by the positions of stars

A primitive observer will think that stars are close to us, that if he climbed a mountain he might be able to touch some of them. This was the attitude of Pharaoh of Egypt when he declared, as recounted by the Qur'an:

﴿ يَٰهَٰمَٰنُ ٱبۡنِ لِي صَرۡحٗا لَّعَلِّيٓ أَبۡلُغُ ٱلۡأَسۡبَٰبَ ○ أَسۡبَٰبَ ٱلسَّمَٰوَٰتِ
فَأَطَّلِعَ إِلَىٰٓ إِلَٰهِ مُوسَىٰ . . . ﴾ [غافر: ٣٦، ٣٧]

"O Haman! Build for me a tower that haply I may reach the roads, – The roads of the heavens, and may look upon the God of Moses,..." (40: 36-27).

The scientific progress, however, has revealed the distances of stars, which were unknown to humans over the ages. The sun, for instance, is 93 million miles from us (150 .million km), a distance that light travelling at a speed of 300 km/sec covers in eight minutes. Light covers the distance between the nearest star to earth in four and a quarter years. Some stars are one hundred light years away from us (i.e. light takes a hundred years to cover the distance from that star to the earth), some are one thousand light years away, some are a million years away, some are 340 million years away, and some are many more million years away! Does not this reveal to us new meanings, unknown to previous generations, of the following verses:

﴿ ۞ فَلَآ أُقۡسِمُ بِمَوَٰقِعِ ٱلنُّجُومِ ○ وَإِنَّهُۥ لَقَسَمٞ لَّوۡ تَعۡلَمُونَ عَظِيمٌ ﴾
[الواقعة: ٧٥، ٧٦]

"Nay, I swear by the places of the stars – And lo! that verily is a tremendous oath, if you but knew –" (56: 74-75)

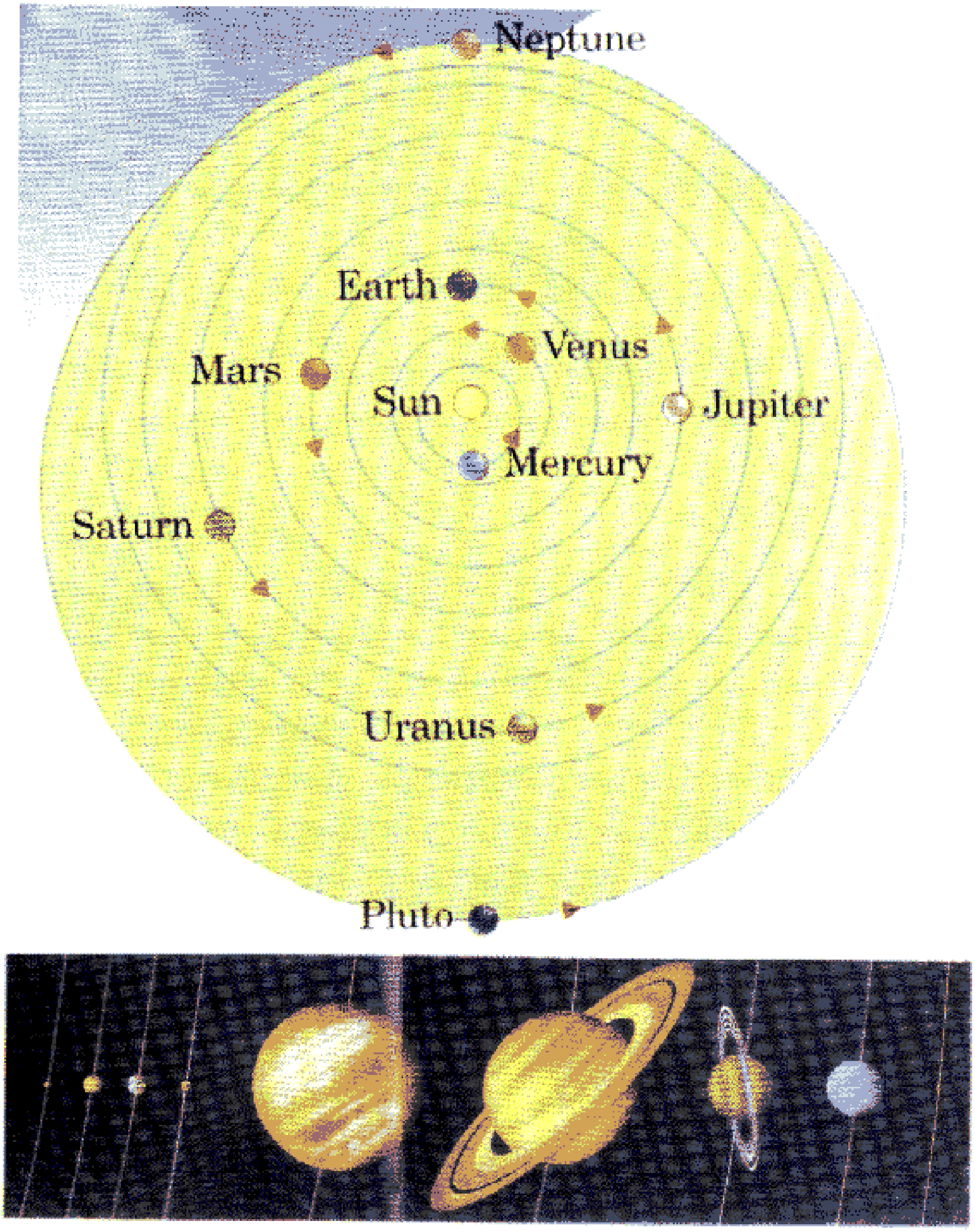

Neptune
Earth
Venus
Mars
Sun
Jupiter
Mercury
Saturn
Uranus
Pluto

Figure '38"

The Solar System

Our Solar System consists of orbiting planets, their moons, the comets and the meteors, all rotating along elliptical (oval) orbits, all in one direction round the sun, and revolving around their axes in the same direction, from east to west. All planets are dark in themselves, but they reflect the sun's light. The planets, in the order of their closeness to the sun are: Mercury, Venus, the Earth, Mars; then there are some small planetlets; then there are the gaseous planets Jupiter, Saturn, Uranus and Neptune. Lastly, there is the planet Pluto.

The virtue of contemplating the heavens and the earth

The Lord compliments in His Book those who contemplate the creation of the heavens and the earth, while He reviles those who fail to do that. This may be seen, for instance, in the following verse:

﴿ وَجَعَلْنَا ٱلسَّمَآءَ سَقْفًا مَّحْفُوظًا ۖ وَهُمْ عَنْ ءَايَٰتِهَا مُعْرِضُونَ ﴾ [الأنبيا : ٣٢]

"And We have made the sky a roof withheld from them. Yet they turn away from its portents." (21: 32)

Reflect then on the greatest of roofs, the heaven, and its solidity, strength and cohesiveness, despite its being mere smoke, or water vapour. The heavens are described in the Qur'an in the following verses:

﴿ وَبَنَيْنَا فَوْقَكُمْ سَبْعًا شِدَادًا ﴾ [النبأ : ١٢]

"And We have built above you seven strong heavens." (78: 12)

﴿ ءَأَنتُمْ أَشَدُّ خَلْقًا أَمِ ٱلسَّمَآءُ بَنَىٰهَا ۝ رَفَعَ سَمْكَهَا فَسَوَّىٰهَا ﴾ [النازعات : ٢٧، ٢٨]

"Are you the harder to create, or is the heaven that he built?" (79: 27)

﴿ وَجَعَلْنَا ٱلسَّمَآءَ سَقْفًا مَّحْفُوظًا ﴾ [الأنبياء : ٣٢]

"And We have made the sky a roof withheld from them." (21: 32)

Look, then, at that sublime structure, strong and overarching, raised by the Lord to such a lofty place, and adorned by the most spectacular adornment, and abounding with so many wonders and signs. All this was first begun from water vapour which rose like smoke. This was well expressed in a couplet:

Glory be to Him who is not duly appreciated by His creation, Who, established upon the throne, is Single and One.

He did lay down for His creatures various landmarks, and erected for them compelling signs, and made clear for them the most evident of pointers, so that those who are destined to perish should perish by clear proof of His sovereignty, and those who survive should survive by clear evidence; for Allah is the Hearer, the Knower. Look, then, afresh at the sky. See its planets in their orbiting, rising and setting; its sun and moon, and diverse rising points and setting points, their tireless unceasing progress, without slowing down their movement or deflecting from their orbits. They run along their predestined orbits exactly as was designed for them, until the day their Maker wills to call them back. Notice the great number of stars and planets, their dimensions and their colours; some reddish, some whitish, and some greyish.

Look now at the progress of the sun in its orbit during a year, and its rising and setting every day along a route that its Lord determined for it, so that it will never exceed it or fall short of it. Had it not been for its rising and setting we would not have known day from night, nor would it be possible for us to know time. There would be permanent darkness over the world, or there would be eternal light; it would not be possible to assign a time for sleep and rest and another time for work. See how the Hearer, the Omniscient determined for the sun two long journeys, an ascending journey until it reaches its zenith, and a descending one until it reaches its lowest trough; and its orbit is a little different every trip, until it has gone a whole cycle. This movement results, by the will of the Lord, the Able, in the succession of seasons: summer, winter, autumn and spring. Once its route descends from the zenith of the sky the air cools and winter arrives; then, when it takes the zenith of the sky the heat blazes; when, on the other hand, it is between the two extremes, the weather is moderate. Much of the welfare of men, animals and plants emanates from the succession of those four seasons; they are the basis for the diversity of foods, the shapes and colours of plants, and the foods, meat and benefits of animals. And that does not exhaust their functions.

Think of the moon and its amazing wonders: how Allah exhibits it first as a narrow thread, then its light increases gradually, and it waxes night by night, until it waxes into a full moon, when it reaches its maximum phase; then it begins to decrease in size until it reaches its first phase. In all this, there are diverse benefits for humans in their living, worship and rituals; it is the basis for calculating months and years. Mankind has used it to organize things, besides many other benefits that no one but Allah can keep count of.

In general, no star or planet is created by the Lord Almighty without many good reasons: its particular dimensions, colour and location in the heavens, its proximity or remoteness from the zenith of the sky, its proximity or remoteness to the star or planet next to it are all determined for precise purposes. To have a sense of that in general, compare the facts of the sky to the organs of your body: the diversity, the difference in structure of the adjacent organs, and the distance of the far ones; their shapes, dimensions, and variety of benefits and functions, contrasting all that with the enormity of the sky and hugeness of its stars and planets and signs! Astronomers are agreed that the sun is more than a hundred and sixty times bigger than the earth, that many of the stars that we see are at least as big as the earth, which is enough to imagine their remoteness and height.

There is in this connection a tradition reported by Al-Tirmidhee on the authority of Abu Hurairah[1],

«أَنَّ بَيْنَ الأَرْضِ وَالسَّمَاءِ مَسِيرَةَ خَمْسِمِائَةِ عَامٍ وَبَيْنَ كُلِّ سَمَاءَيْنِ كَذَلِكَ»

"That the distance between the earth and the sky takes five hundred years to traverse, and that there is the same distance between each two skies."

You see a certain star as stationary, while from its first appearance to its full appearance it has run along its orbit a hundred times or more than the running of the earth, in that mere moment. That is because if the star were a hundred times bigger than the earth, for instance, and it traversed in a moment a certain distance, it had run in that moment a hundred times the diameter of the earth, and that is so in every moment all the time. All this happens while man is unmindful of the wondrous events that are taking place. It has been said that if you utter the words 'no, yes' the sun has traversed along its route in the time that elapsed between the two words a distance of five hundred years of man's movement. The Almighty holds the heavens, with their stupendous size and the size of the bodies they contain, in their places without pegs to hold them from above or supports from below.[2]

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[1] Reported by Al-Tirmidhee (3298), Ahmad (2/370) and Al-Baihaqee in Al-Asmaa wa Al-Sifat, pp. 399-400; rated as 'weak' by Al-Albanee in his evaluation of the traditions of 'Al-Sunnah' of Ibn Abee Aasem (1/254).

One may cite in support of this the following verses from the Qur'an:

﴿ خَلَقَ ٱلسَّمَٰوَٰتِ بِغَيۡرِ عَمَدٖ تَرَوۡنَهَاۖ وَأَلۡقَىٰ فِي ٱلۡأَرۡضِ رَوَٰسِيَ أَن تَمِيدَ بِكُمۡ وَبَثَّ فِيهَا مِن كُلِّ
دَآبَّةٖۚ وَأَنزَلۡنَا مِنَ ٱلسَّمَآءِ مَآءٗ فَأَنۢبَتۡنَا فِيهَا مِن كُلِّ زَوۡجٖ كَرِيمٍ ○ هَٰذَا خَلۡقُ ٱللَّهِ فَأَرُونِي
مَاذَا خَلَقَ ٱلَّذِينَ مِن دُونِهِۦۚ بَلِ ٱلظَّٰلِمُونَ فِي ضَلَٰلٖ مُّبِينٖ ﴾ [لقمان: ١٠، ١١]

"He has created the heavens without supports that you can see, and has cast into the earth firm hills, so that it quakes not with you; and He has dispersed therein all kinds of beasts. And We send down water from the sky and We cause plants of every goodly kind to grow therein. This is the Creation of Allah. Now show me that which those you worship beside Him have created. Nay, but the wrongdoers are in error manifest!" (31: 10-11)

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[2] The Almighty says in the Qur'an:

﴿ ٱللَّهُ ٱلَّذِي رَفَعَ ٱلسَّمَٰوَٰتِ بِغَيۡرِ عَمَدٖ تَرَوۡنَهَاۖ . . . ﴾ [الرعد: ٢]

"Allah it is Who raised the heavens without visible supports, then mounted the Throne." (12: 2) In this connection modern science says that every star or planet has a mass-centre inside it, that although stars and planets are in continuous movement, the distances between their mass-centres are invariable, which indicates that there is in every case an invisible gravity column that holds them so as to preserve the mass-centres of the sky's bodies at fixed distances from each other, despite the movements of all those bodies. This must remind us of the expression in the above verse:

﴿ بِغَيۡرِ عَمَدٖ تَرَوۡنَهَاۖ ﴾ "without visible supports."

Two kinds of looking

In the above and similar verses looking has two senses: there is "looking" with the eye, the external organ, by which one may see for instance the blue of the sky, its stars, its height and vastness. In such vision man is equal to other species, and so it is not the vision that man is exhorted to practice. In the other sense, "looking" is to go beyond the first external vision to see with the mind's eye, so that the heaven's gates are opened to the observer; he wanders among its territories and lands, and associates with its angels. It is then that gates are opened for him, one by one, until his mind's journey carries him to the Throne of the Compassionate, where he envisions its huge and great size, its majesty, glory and elevation; he envisions the seven heavens, and the seven earths, whose mass is, compared to the Throne's, like a ring to a desert; he envisions the angels circumambulating the Throne, with their hymns of praise and glorification of the Lord rising in chorus. He sees with the mind's eye the commandments of the Lord descend from above, managing the worlds and directing the Almighty's soldiers, whose swarms no one can count but their Lord and King. He realises how directives descend to determine the reviving of multitudes of creatures and the perishing of other multitudes; the honouring of some and the suffering of others; the enthroning of someone and the dethroning of another; the transporting of a blessing from one place to another place; and the fulfilling of all sorts of needs, in all their variety and abundance: the rescue of a bankrupt, the enrichment of an indigent, the healing of an invalid, the saving of someone stricken with disaster; the forgiveness of a sin, the resolution of a crisis, the supporting of a persecuted one, the guiding of a lost one, the educating of an ignorant one, the reclamation of an escaped slave, the safety of a terrified one, the succour of a succour seeker;

the empowering of a feeble person, the support of a distressed one, the help of someone who is handicapped, the revenge on an oppressor, the stopping of aggression; all decrees towards the establishing of justice, sympathy, wisdom and mercy, covering all corners of the world. No call distracts Him from another call, the great succession of pleas and petitions do not confuse Him, no matter how numerous, diverse, or simultaneous. He does not complain at the insistence of insistents, and His bountiful bestowings do not decrease the riches of His treasure by a fraction, for there is no god but He, the Proud, the Wise.

Conceiving this, the believing heart is prostrated in the presence of the Compassionate, bending in awe of Him, subservient to His might; bound to His hegemony; it will prostrate in front of the King, the True, the Clear, a prostration that is never interrupted until the day of recompence. All this the heart does while it is still in its place, at home, and not leaving its residence which is a most marvelous wonder of the Lord's and an over whelming occurrence. Blessed be the journey, a most rewarding trip, lifting the human and blessing his life and rewarding him amply and ensuring good consequences. It is the trip that revives souls and wins the key to happiness; fills the minds and hearts with peace, not borne with hardship like other trips.

The wonder of variation in the stars' movements

Reflect now on the variation in the movement of stars and planets, and all the amazing wonder implied in this. See how some stars never travel but in company with others, never striking a lonely path; it is always a collective progress; others rush alone, free from any ties with companion or partner. Even if they by coincidence happen to be in company with other travellers, they join them for a night and then again separate themselves the next night – they seem to be intimate pals for one night, but then separate like utter strangers. Each star has two absolutely and vastly different movements, a general movement that the whole constellation follows, and a special movement that the single star follows along its orbit. This has been likened to an ant that moves left round a grind-stone that turns right: the ant is in this case moving in two different directions, one on its own, and one forced on it, being bound to the grind-stone that pulls it in a direction other than its own. Like the ant, a star is proceeding from interval to interval in one direction, while the whole field of its progress is proceeding in a different direction.

So ask the heretics, the deniers, what nature is that which determined that? What astrological power dictated it? Why do not all the stars follow identical routes, progressing according to one system, one plan, one movement and one route? Is it not the work of Him whose wisdom overwhelms minds; whose artifices and creations bear witness to His being the Creator, the Originator, the Shaper, like to Whom there is no one else; He Who did everything with care, who excelled in every thing He crafted; the Omniscient, the Wise Who creates then disposes; Who measures, then guides. All this is one of His signs that point to Him, a wondrous making of His that is a plain message to the thinking minds which will guide those who travel towards Him; a sign that all that is in the universe is a humble creation, firmly controlled and managed. It is as the Almighty says in the Qur'an:

﴿ إِنَّ رَبَّكُمُ ٱللَّهُ ٱلَّذِى خَلَقَ ٱلسَّمَٰوَٰتِ وَٱلْأَرْضَ فِى سِتَّةِ أَيَّامٍ ثُمَّ ٱسْتَوَىٰ عَلَى ٱلْعَرْشِ
يُغْشِى ٱلَّيْلَ ٱلنَّهَارَ يَطْلُبُهُۥ حَثِيثًا وَٱلشَّمْسَ وَٱلْقَمَرَ وَٱلنُّجُومَ مُسَخَّرَٰتٍۭ بِأَمْرِهِۦٓ ۗ أَلَا لَهُ ٱلْخَلْقُ
وَٱلْأَمْرُ ۗ تَبَارَكَ ٱللَّهُ رَبُّ ٱلْعَٰلَمِينَ ﴾ [الأعراف : ٥٤]

"Lo! your Lord is Allah Who created the heavens and the earth in six Days, then mounted He the Throne. He covers the night with the day, which is in haste to follow it, and has made the sun and the moon and the stars subservient by His command. His verily is all creation and commandment. Blessed be Allah, the Lord of the Worlds!" (7: 54)

As to the inquiry about the secret in some stars following invariable routes while others changing their orbits, the answer is this: If they all followed invariable routes, they would cease to reveal the evidence and wisdom that emerge from their changing of routes and the tracks they follow in their orbits. On the other hand, if they all changed their routes, they would cease to have fixed routes that enable us to recognize them, nor would they have systems that humans can use as a frame of reference. The fact is that the movement of the route-changing stars is determined by reference to the ones with fixed routes, in the same way as the movement of walking people are judged by reference to the immobile objects they pass by. If they all followed an identical plan there would be confusion in recognizing them, and the wisdom and benefits that are realized by their variety would cease to be evident; the non-believer would have some justification to cling to in his disbelief – he would say: If the designer of those bodies had volition, they would not have been following the same movement, the same system, and the same timing. As it is, the system and method they follow is a most evident proof of the existence of the Creator, His power, will, knowledge, wisdom and oneness.

The stars

Consider also the wisdom of the Almighty Lord in His creation of the stars, in their abundance and their amazing quality, that they are the adornment of the sky, the guiding lights for people on land and sea; we can see their light and luminosity despite the great distance. Without them, we would not have anything to direct us and guide us, and we would not be able to do calculations. Consider, then, their compliance with the commandments of their Lord, the Almighty, as they follow the same system, which He judged that they should not deviate from. He set the constellations, the orbits; the immobile and the mobile stars; the large, the small, the medium, the whitish pink, the whitish red; some hiding from the observation of the spectator. Those with orbits are divided into two groups, high and low, and all are decreed to follow the same system. The sun, teh moon and the mobile stars are placed in their right places in the whole group; one, the moon, completing its cycle in one month; some completing theirs in one year, and some in several years; all for deep judgment. He ordained that all those events should be attached to events on the earth, so that people can predict the events from observing the stars. By observing the rising of the Pleiades, for instance, they know what events will take place concurrently with that rising, and the same with its setting. So it is with other stars and groups and positions. Reflect, too, how the Lord deemed that the Ursa Minor and Ursa Major and their adjacent stars are a peculiar phenomenon, so that they do not set because of their proximity to the centre; a phenomenon that bear reflection to delve into the divine wisdom it implies – those constellations are like landmarks that people use to find their way in untrodden ways on land and sea; they look at that group, at the Capricon and the two bright stars of Ursa Minor at all times, whenever they like, and refer to them for guidance.

The light of stars

Consider also the light of the moon and stars in the dark of night, and the wisdom they imply. The Almighty willed, in His judgment, to create dark for the resting of animals and for the cooling of the air that touches animals and plants, to counterbalance the heat of the sun, thus enabling plants and animals to survive. As it is so, the Lord willed to moderate the darkness of night with a little light, so that night is not stark darkness, an absolute black night without any kind of illumination; for in that case animals would not be able to do any movement or activity. An animal often needs to do some activity, like moving or walking, by night rather than by day, because of the latter's shortness, or excessive heat, or, in the case of many animals, because of fear. Therefore, He destined that there should be during the night such light from the moon and stars that allows for a lot of things to be performed, like travelling and tilling, and other occupations of land tillers and planters. Moonlight by night has been supplied to assist the animal to carry out those actions. On the other hand, the light of night is uncontinuous and not as bright as the day's is, lest the night should be like the day, which would eliminate the wisdom of the difference between them destined by the Mighty, the Knowing.

Consider, then, the deep judgment and amazing calculation that ordained what assisted the animal to deal with the hardship of darkness with help from the domain of light. The dark domain, the night, has not been left to reign absolutely, but it has been softened with some light of mercy and bounty form the Lord. So glory be to Him who took good care of everything He made and perfected everything He created.

The sun

The sun is sometimes called the 'atomic furnace'

1. It is a dazzling lamp

2. It provides man with heat, light and radioactive energy.

3. It is one million and three hundred thousand times the size of the earth.

4. It is about 150 million kilometres away from us.

5. Its light reaches us in approximately 8 minutes and forty seconds.

6. Its gravity is 28 times the gravity of the earth.

7. The sun revolves around its axis in 25 days.

8. It is one star of 100,000 million stars in our galaxy. Its size is nothing compared with that of some of the stars called 'supergiants'.

9. It is 3200 light years far from the centre of our galaxy.

10. The temperature at the surface of the sun is 5500 degrees centigrade, and the temperature increases toward the nucleus until it reaches 10 million degrees centigrade.

11. Hydrogen is the main element of which the sun consists.

12. Due to excessive temperature, the sun loses about 4 tons of its mass per second, as a result of the chemo-thermal reactions. In fact, this is the source of the energy we draw upon and benefit from.

13. The sun is not less than 5000 million years old, and the galaxy is much older than that.

So glory be to Him who swore by the sun when He said:

﴿وَالشَّمْسِ وَضُحَاهَا﴾ [الشمس : ١]

"By the sun and his brightness." (91: 1)

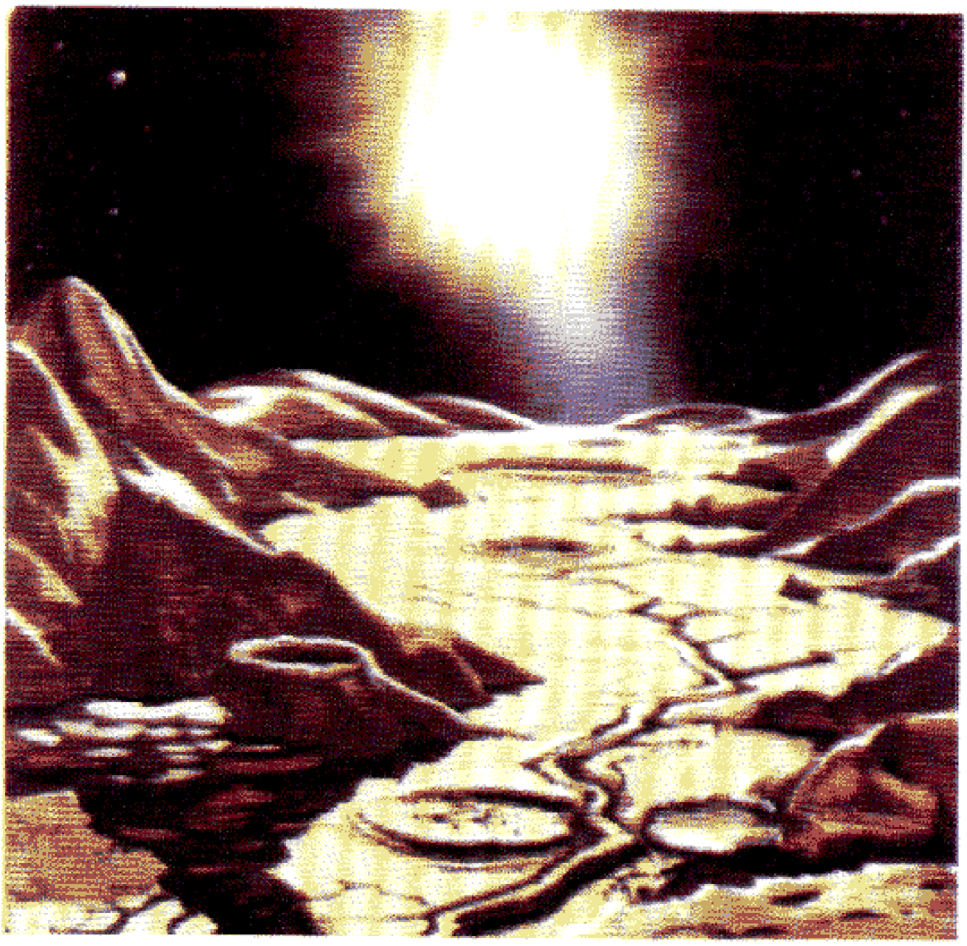


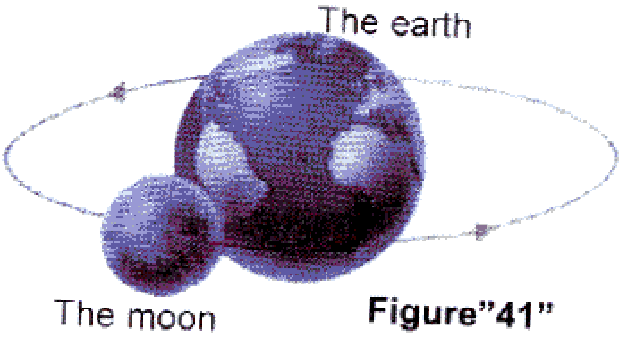
Figure "40"

Mercury

The smallest of the orbiting planets, Mercury is the closest to the sun. The temperature on its side facing the sun rises to 400 degrees centigrade, while the temperature on the dark side is 150 degrees below zero. In view of the excessive heat on its surface, and the lack of oxygen in its atmosphere, scientists exclude the possibility of life of any kind on it. The diameter of Mercury is 4088 kilometres; it revolves around the sun once in 88 days. Because of the sun's gravity, its day is 176 of the days of earth.

The earth

An observer of the earth from space would see it as blue and white. The blue is the colour of water on earth, which covers an area of 70 percent of the earth's surface. The white colour reflects the water vapour collected in the form of clouds. The earth's diameter is 12760 kilometres. It rotates around its axis (counterclockwise) once in 23 hours and 56 minutes, which is the cause of the day and night.



Figure"41"

Venus

88 % the size of earth, it orbits the sun at a speed of 35 km/sec; it is 108 million kilometres away from the sun. Clouds of carbon dioxide engulf its atmosphere; its temperature is approximately 480 degrees centigrade. It rotates on its axis in 243 days.

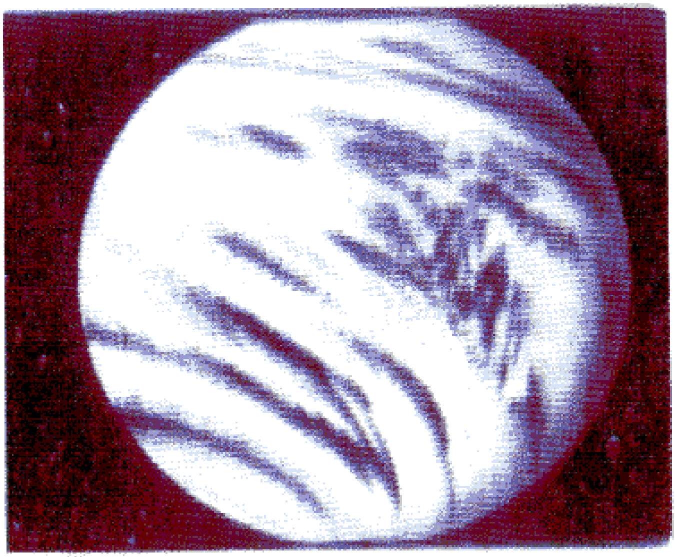


Figure "42"

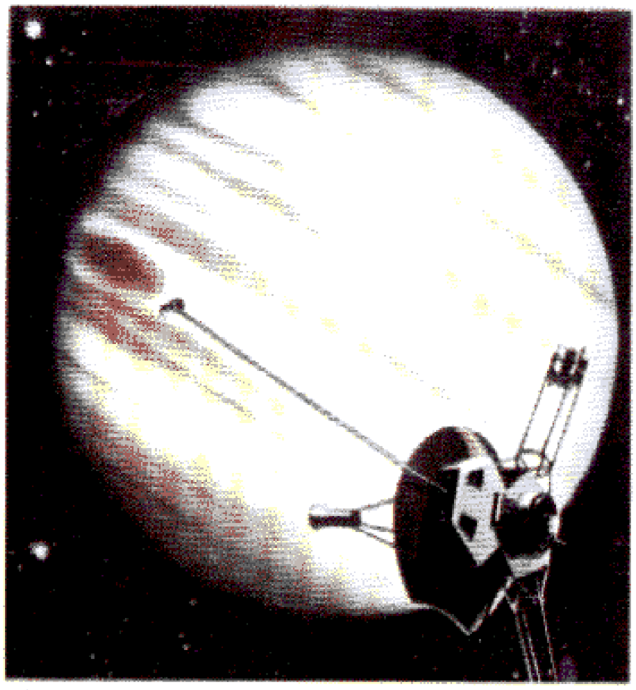


Figure "43"

Jupiter

* It has four moons; it is 778 million km away from the sun.

* Its diameter at the equator is 142,800 km.

* It revolves around the sun in 11.86 years.

* It rotates on its axis in 9 hours, 50 minutes and 30 seconds.

* It is composed of hydrogen and helium.

* Its size is 13 times that of the earth.

* Its equatorial speed is 13 km/sec.

Figure "44"

Saturn

Second of the planets in terms of volume, its most remarkable feature is the rings around it, like a solid girdle, which endow it with special charm. Space voyages have asserted that those rings are in the hundreds, and that they consist of millions of bits of water ice. Its diameter is around 119, 600 km. It rotates on its axis in 10 hours and 14 minutes, and orbits the sun in 29 years and a half.

It consists of gas; therefore it is very light; it is so light that it would float on water.

Neptune

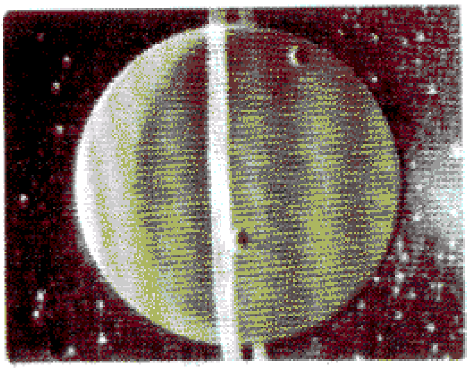


Figure "45"

Neptune and Uranus are similar planets: both are greenish coloured, have ice mountains on them, and have similar sizes. Neptune, however, rotates around itself once in 16 hours, and around the sun once in 165 years!

Uranus

There is a thick layer of clouds that engulf Uranus; its atmosphere consists of rings of hydrogen and methane. Its diameter is approximately 51800 kilometres; it rotates on its axis in 10 hours and 48 minutes; it orbits the sun in 84 years. Since its axis is very tilted, each of its poles does not face the sun for 42 years, the longest winter in the solar system.

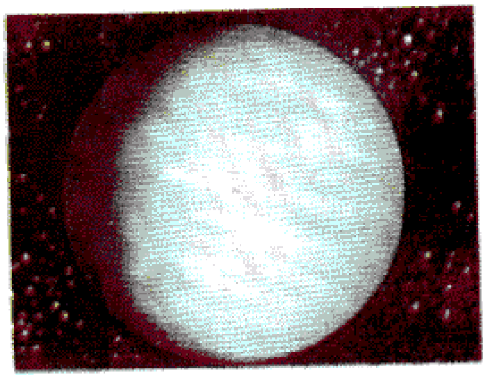


Figure "46"

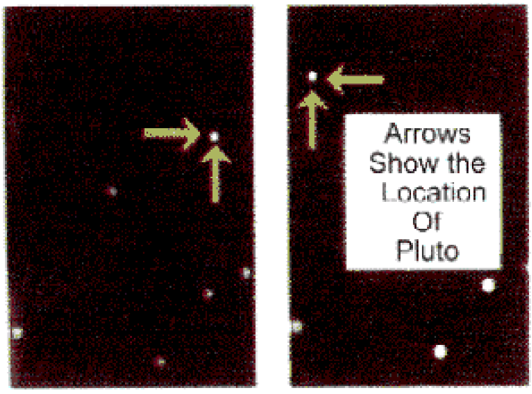
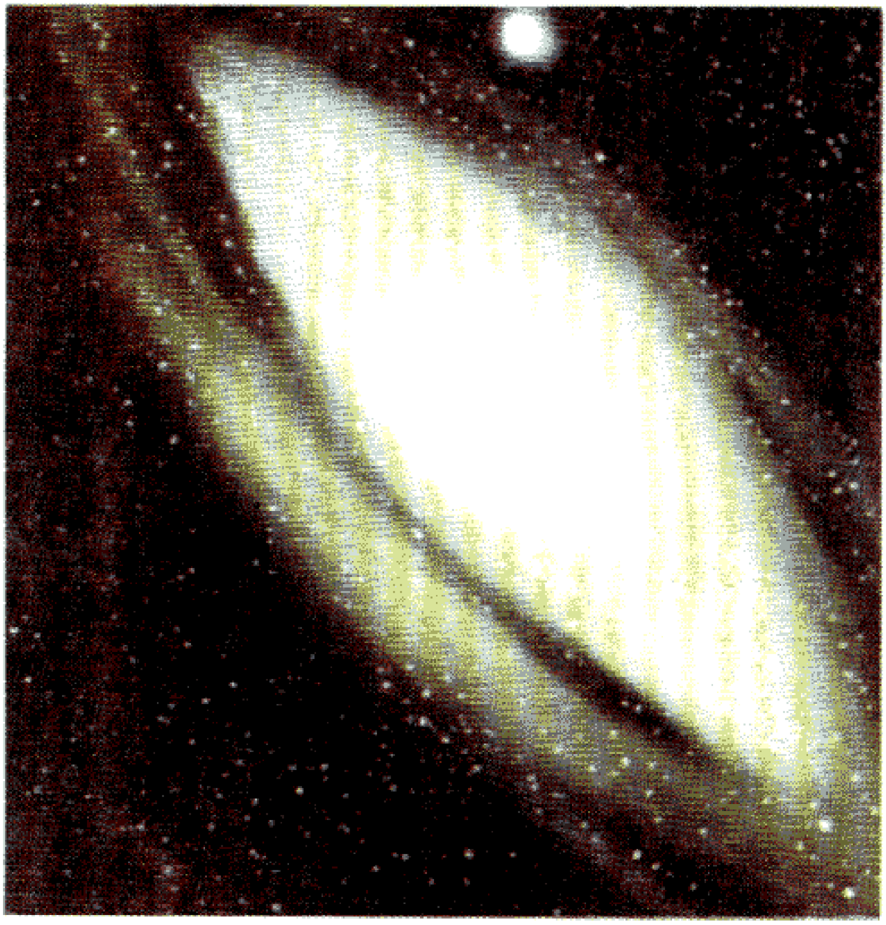


Figure "47"

Pluto

The farthest planet from the sun, Pluto is also the smallest, with a diameter of only 3000 km. In view of its great distance, scientists do not have exact information as to its mass, density and volume.



Figure"48"

The above picture shows the Andromeda Galaxy, the object farthest from the earth but still visible with the naked eye. It resembles a faint-glowing smoke cloud. It was supposed to be a nebula, a cloud of gases and dust ,until the astronomer Edwin Hubble measureed its distance in 1923. It is estimated to be a million light years from the earth. It resembles our own galaxy, the Milky Way, and has long spiral arms containing billions of stars.

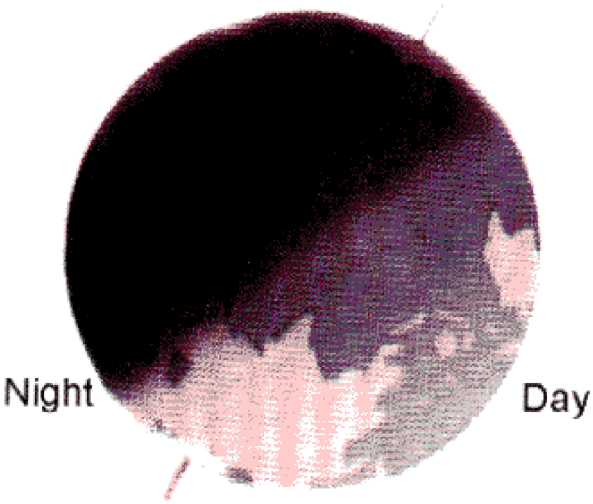


Figure “49”

The earth’s tilt

The earth is tilted by an angle of 23 degrees, which is so for good reasons. Had the earth not been oblique, the two poles would have been in constant twilight, the water vapour from oceans would be moving northward and southward, causing on its way the formation of continents of ice, and may be deserts between the equator and the ice. Ice rivers would, in this case, form and pour forth along valleys to gather in salt-covered oceans, forming temporary salinas. The huge mass of ice would weigh down the poles so heavily that it would cause bulging or eruption at the equator; or at least a different equator would have formed. Besides, the drop in the level of ocean would expose great areas of land, diminish the amount of rainfall all over the world, leading to devastating consequences.

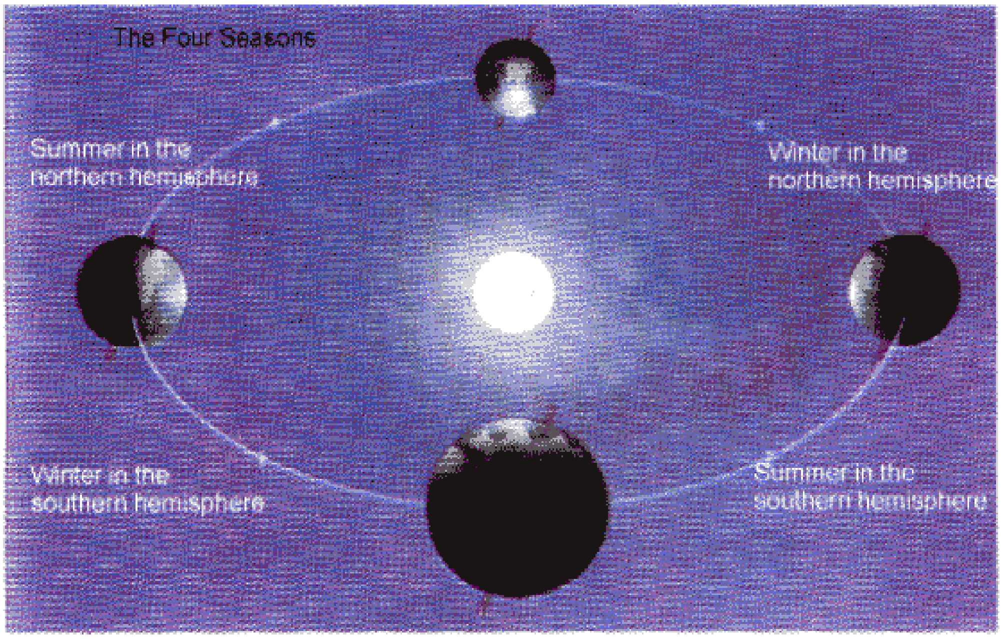

The Four Seasons
Summer in the northern hemisphere
Winter in the northern hemisphere
Winter in the southern hemisphere
Summer in the southern hemisphere

Figure "50"

The four seasons

Consider, then, the sun's movement upwards and downwards relative to the earth, a movement that results in the changing of times and seasons, which realizes various benefits and functions. If it were just one season all the time all the benefits that accrue from the other seasons would be missed – if it were invariably summer, then the benefits of winter would be missed; and if it were winter, the benefits of summer would be missed. And so it would be if it were autumn all the time or spring all the time.

In winter, heat is stored in cavities, the depths of the earth and the mountains, and this results in the sprouting of the fruitful plants and other plants. The surface is cooled, and the air is humid, which results in the formation of clouds, rain, snow and hail, all essential for the living earth and its inhabitants; the animals' bodies are strengthened and empowered, nature's forces are enhanced and bodies recuperate after their sapping and debilitation in the summer heat.

In spring new life sprouts, and the seeds of the winter bud and blossom; new flowers sprout, trees bloom with blossoms, and animals search for chances of mating.

In summer the air is quite warm, often scorching, so fruits ripen, bodies shed their waste and the humours that had gathered during the winter; cold diminishes and withdraws to cavities, cooling springs and wells; the stomach is unable to digest heavy food that it used to digest during the winter, which it was able to digest with the heat preserved in the bellies; while in summer that heat has come out to the surface of the body and the cold has been absorbed and sunk inside.

When autumn comes, temperature moderates, air is purified and cooled, the seething heat is softened; autumn is thus destined by Allah in His wisdom to be midway between the extreme heat of summer and the biting cold of winter; in this way an animal does not have to shift all at once from extreme heat to extreme cold, a shift which would harm it and cause it a lot of suffering, while it is not so when the change is gradual: the animal adjusts to new stages of change gradually, and is more primed to receive a bigger amount of change until the extreme cold has come, with the animal well adapted to it and resigned to it, which is a compelling wisdom and a glowing sign of the Lord's mercy. The same is true of the spring which is midway between the winter and the summer; in it the animal adapts to the changes from cold to heat in small increments that come successively and according to a careful design. Glorified be Allah, Lord of the Worlds, the best of creators.

Control of sunrise

Reflect on the wisdom implied in the rising of the sun over the world, how that is designed by the Proud, the Knowing, may His Name be glorified. If it were, after reaching a certain spot in the sky, to stay there, its rays would not reach so many regions, because the shade of the globe would block its reaching the other side; it would be an everlasting night in those regions, and it would be an everlasting daylight in regions exposed to the sun; inhabitants in both parts would have their life completely disrupted. But the Lord, in His great providence and mercy, has willed that the sun should rise to start the day in the east, shining on the opposite western horizon; then it should go on progressing along its curving route, shining on region after region, until it reaches the west, where it should shine over regions that were inaccessible at the start of the day. In this way, people in those regions will have the alternation of day and night, which is essential for them to undertake their chores.

The light of the sun and the light of the moon

Regard the sun and the moon, what they possess of light and illumination; consider how the Lord willed that they should have stages and phases, shifting from one to one, something that realizes the progressing of the year to its completion, and realizes for the creation advantages that they cannot do without for their survival. It is by this that times are calculated; the times for debts, the duration of leases, transactions, accounts and the like. If it were not for the shifting of the sun and moon from phase to phase, all that would not be possible. That is what the Almighty calls attention to in various places in His Book, such as:

﴿ هُوَ ٱلَّذِى جَعَلَ ٱلشَّمْسَ ضِيَآءً وَٱلْقَمَرَ نُورًا وَقَدَّرَهُۥ مَنَازِلَ لِتَعْلَمُوا۟ عَدَدَ ٱلسِّنِينَ
وَٱلْحِسَابَ ۚ مَا خَلَقَ ٱللَّهُ ذَٰلِكَ إِلَّا بِٱلْحَقِّ ۚ يُفَصِّلُ ٱلْءَايَٰتِ لِقَوْمٍ يَعْلَمُونَ ﴾ [يونس : ٥]

"He it is Who appointed the sun a splendour and the moon a light, and measured for her stages, that you might know the number of the years, and the reckoning. Allah created not all that save in truth. He details the revelations for people who have knowledge." (10: 5)

﴿ وَجَعَلْنَا ٱلَّيْلَ وَٱلنَّهَارَ ءَايَتَيْنِ ۖ فَمَحَوْنَآ ءَايَةَ ٱلَّيْلِ وَجَعَلْنَآ ءَايَةَ ٱلنَّهَارِ مُبْصِرَةً لِّتَبْتَغُوا۟ فَضْلًا
مِّن رَّبِّكُمْ وَلِتَعْلَمُوا۟ عَدَدَ ٱلسِّنِينَ وَٱلْحِسَابَ ۚ وَكُلَّ شَىْءٍ فَصَّلْنَٰهُ تَفْصِيلًا ﴾

[الإسراء : ١٢]

"And we appoint the night and the day two portents. Then We make dark the portent of the night, and We make the portent of the day sight-giving, that you may seek bounty from your Lord, and that you may know the computation of the years, and the reckoning; and everything have We expounded with a clear expounding." (17: 12)

The rising and setting of the sun and the moon

Reflect on the rising and setting of the sun and the moon for establishing the alternation of the day and the night. Without their rising, life would not be possible – how could people go about earning their living, looking after their interests, when the world is in darkness? How could they enjoy life without light? Consider also the wisdom implied in their setting: without that people would not be able to rest and settle with all the pressing need for sleep and for the resting of the senses, for the activation of internal forces that take control during sleep to facilitate the digestion of food and the distribution of nutrients to organs. Without the setting of the sun, too, the earth would get too hot because of the continuity of the heat of the sun and its rays, until every living animal or plant is scorched. As it is, the sun rises the way a lantern is lighted for the residents of a house to go about their work, then it is put out, so that the residents settle down and relax. The light of day and the dark of night, with their alternating heat of the former and the cool of the latter, are coordinated and integrated, in a way that they may realize the interests of the world. These facts have been indicated in the Qur'an in the following verses:

﴿قُلْ أَرَءَيْتُمْ إِن جَعَلَ ٱللَّهُ عَلَيْكُمُ ٱلَّيْلَ سَرْمَدًا إِلَىٰ يَوْمِ ٱلْقِيَٰمَةِ مَنْ إِلَٰهٌ غَيْرُ ٱللَّهِ يَأْتِيكُم
بِضِيَآءٍ ۖ أَفَلَا تَسْمَعُونَ ○ قُلْ أَرَءَيْتُمْ إِن جَعَلَ ٱللَّهُ عَلَيْكُمُ ٱلنَّهَارَ سَرْمَدًا إِلَىٰ
يَوْمِ ٱلْقِيَٰمَةِ مَنْ إِلَٰهٌ غَيْرُ ٱللَّهِ يَأْتِيكُم بِلَيْلٍ تَسْكُنُونَ فِيهِ ۖ أَفَلَا تُبْصِرُونَ﴾

[القصص: ٧١، ٧٢]

"Say: have you thought, if Allah made night everlasting for you till the Day of Resurrection, who is a God beside Allah who could bring you light? Will you not then hear?

Say: Have you thought, if Allah made day everlasting for you till the Day of Resurrection, who is a God beside Allah who could bring you night wherein you rest? Will you not then see?" (28: 71-72)

In the above verses, the Almighty mentions vision in association with the day, because it is the time for vision, as seeing is dominant and operative during the day; while He mentions hearing in association with the night, as hearing is dominant at night, when animals can hear what they cannot hear by day, night being a time of quiet and inactivity, so that hearing is in control and seeing is secondary, while by day it is the other way round: vision is in control and hearing is secondary. Therefore, when the Qur'anic verse says: ﴿أَفَلَا تَسْمَعُونَ﴾

'Will you not then hear?' it is referring to

﴿قُلْ أَرَءَيْتُمْ إِن جَعَلَ ٱللَّهُ عَلَيْكُمُ ٱلَّيْلَ سَرْمَدًا إِلَىٰ يَوْمِ ٱلْقِيَٰمَةِ مَنْ إِلَٰهٌ غَيْرُ ٱللَّهِ يَأْتِيكُم بِضِيَآءٍ﴾ [القصص : ٧١]

'Say: have you thought, if Allah made night everlasting for you till the Day of Resurrection, who is a God beside Allah who could bring you light?';and when it says: أَفَلَا تُبْصِرُونَ

'Will you not then see?', it is referring to

﴿قُلْ أَرَءَيْتُمْ إِن جَعَلَ ٱللَّهُ عَلَيْكُمُ ٱلنَّهَارَ سَرْمَدًا إِلَىٰ يَوْمِ ٱلْقِيَٰمَةِ﴾

'Say: Have you thought, if Allah made day everlasting for you till the Day of Resurrection, who is a God beside Allah who could bring you night wherein you rest?'

In another chapter the Almighty says:

﴿تَبَارَكَ ٱلَّذِى جَعَلَ فِى ٱلسَّمَآءِ بُرُوجًا وَجَعَلَ فِيهَا سِرَٰجًا وَقَمَرًا مُّنِيرًا ○ وَهُوَ ٱلَّذِى جَعَلَ ٱلَّيْلَ وَٱلنَّهَارَ خِلْفَةً لِّمَنْ أَرَادَ أَن يَذَّكَّرَ أَوْ أَرَادَ شُكُورًا﴾.

[الفرقان: ٦١، ٦٢]

"Blessed be He Who has placed in the heaven mansions of the stars, and has placed therein a great lamp and a moon giving light! And He it is Who has appointed night and day in succession, for him who desires to remember, or desires thankfulness." (25: 61- 62)

The Almighty mentions the day and night as alternatives, each alternating with the other, never coinciding with the other; for if they do coincide, the benefit of having them alternating and different would be missed. This is in fact the reason for having the day and

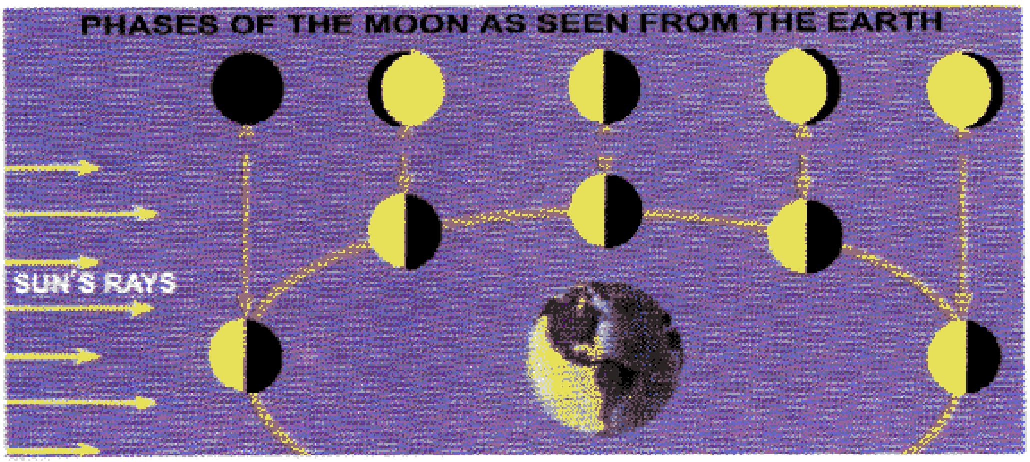


Figure "51"

The moon is a celestial body that orbits the earth; it has a diameter of 3,475 km. It revolves around the earth from west to east in 29 days, 44 minutes and two seconds. The sun shines on the side of the moon that faces it. The moon is not an axis-rotating planet, and that is the reason we see the same side of it all the time.

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the night as different times, and having them alternating with each other, never intersecting or going parallel with the other: each invades the other, pushing it back persistently, until it replaces it altogether; and then the other follows the other, chasing it persistently, until it defeats it and pushes it back, dethroning it from its dominance; then the same process goes on like this, each chasing the other, and never catching up with it.

The day and the night

Two of the signs of the Almighty are the day and night; they are among the most wondrous and magnificent signs among his handicrafts. That is why He keeps citing them time and again in the Qur'an, as in the following instances:

﴿ وَمِنْ ءَايَٰتِهِ ٱلَّيْلُ وَٱلنَّهَارُ ﴾ [فصلت : ٣٧]

"And of his portents are the night and the day" (41: 37)

﴿ وَهُوَ ٱلَّذِى جَعَلَ لَكُمُ ٱلَّيْلَ لِبَاسًا وَٱلنَّوْمَ سُبَاتًا وَجَعَلَ ٱلنَّهَارَ نُشُورًا ﴾

[الفرقان : ٤٧]

"And He it is Who makes night a covering for you, and sleep a repose, and makes day a resurrection." (25: 47)

﴿ وَهُوَ ٱلَّذِى خَلَقَ ٱلَّيْلَ وَٱلنَّهَارَ وَٱلشَّمْسَ وَٱلْقَمَرَ ۖ كُلٌّ فِى فَلَكٍ يَسْبَحُونَ ﴾ [الأنبيا : ٣٣]

"And He it is Who created the night and day, and the sun and the moon. They float, each in an orbit." (21: 33)

﴿ ٱللَّهُ ٱلَّذِى جَعَلَ لَكُمُ ٱلَّيْلَ لِتَسْكُنُوا۟ فِيهِ وَٱلنَّهَارَ مُبْصِرًا ۚ ﴾ [غافر : ٦١]

"Allah it is Who has appointed for you day and night that you may rest therein, and day for seeing." (40: 61)

This is stated in many places in the Qur'an. Think, then, of those two wonders and all the implications and indications pointing to the Lordship of Allah, His mercy and wisdom, how He made the night as a repose and a mantle; covering the world so that movements slow down, and animals take shelter at their habitations, birds at their nests; creatures relax and rest from all their toil and endeavour; and then, once creatures have rested and slept, and are anxious to seek their food and interests, the Breaker of Dawn, the Almighty, ushers the day, leading its troops, with the harbinger of dawn heralding its progress; so it defeats the dark, shattering it to shreds, sweeping it from the world; and lo! everyone can see: animals spread, milling around for forage and seeking their interests; birds leave their nests. It is a revival and recreation that point to the power of Allah, the Almighty, to resurrect creatures on the day of the great reckoning. But as this spectacle is seen by people day after day, they get accustomed to it and used to it, until they are insensible to its significance, and they fail to see in it a reminder of the other revival, when creatures are resurrected from their death. No trace of weakness in the power of the All-powerful, no indication of a lack in His Wisdom or His Knowledge implies the failure of that resurrection; but Allah guides those whom He wills and misguides those whom He wills. This also is a glaring sign of His power, that He should bar whoever He wills from among His creatures from perceiving the compelling signs, so that they are blind to them and have no sense of them at all. They are like one who is immersed in the water to his jaws, but is screaming to be saved from thirst, and he denies the existence of water. With these and similar other considerations, one is brought close to Allah, the Exalted and Glorified, so that one thanks Him, praises Him, supplicates to Him, and prays to Him.

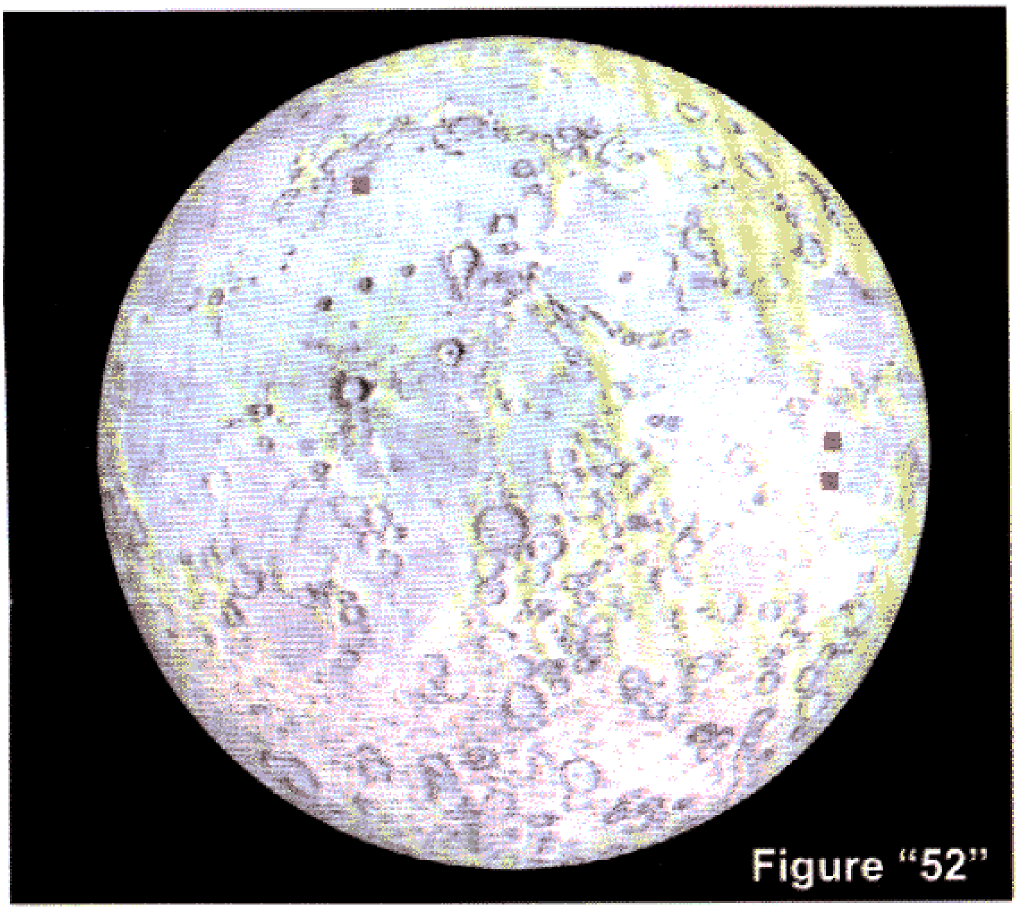


Figure "52"

The side of the moon facing us

The moon is 240,000 miles (400,000 km) away from us; the tide that takes place twice per day is a subtle reminder of the existence of the moon; the tide on the shores of oceans can be in some cases as high as sixty feet. Even the crust of the earth bends outward twice every day by a few inches on account of the gravity of the moon, although every thing seems to us so normal that we are not aware of the astounding force behind these phenomena. Glorified be Your Name, Lord of the Worlds! If the moon's orbit were different from what it is now, the tide would be so strong that it would fragment the solid mountains, dislodge continents from their places! So Glory be to Him Who chose for everything its proper place and the right measure, according to a calculation unknown but to Him.

The duration of the day and the night

Consider also the duration of the day and the night, and you will find that they realize the utmost benefit and good; that if the day or the night were prolonged or shortened from what they are there would be corresponding harm, and the functions they perform would be different. Their total is twenty-four hours, and each gives and takes alternately from the time allotted to the other. Not long after one has taken from the time of the other, it pays it back what it borrowed. We may refer in this connection to the Qur'anic verse:

﴿ يُولِجُ ٱلَّيۡلَ فِي ٱلنَّهَارِ وَيُولِجُ ٱلنَّهَارَ فِي ٱلَّيۡلِ . . . ﴾ [فاطر: ١٣]

"He makes the night to pass into the day, and He makes the day to pass into the night ..." (35: 13) which has been interpreted in two ways. Some say it means that the dark of one is made to replace the light of the other, and the light of one to replace the dark of the other, each displacing the other alternately, which means that the verse is applicable to both, the day and the night.

The other interpretation is that what is decreased from one is gained by the other, what is decreased is absorbed by the other and not lost altogether; which means in other words that the verse is referring to some hours of the day and the night, at the time of inequality; the verse according to this is particular to the time of the day and the night that is absorbed by each other. In moderate climates, the maximum that the day or the night reaches is fifteen hours, leaving nine hours to the other. Where the difference is more, the climate will be more extreme in cold or heat; and cold and heat will be more extreme in climates which are not habitable by man and no plant grows. Every place which the sun does not shine on is not inhabited by animals and no plant grows,

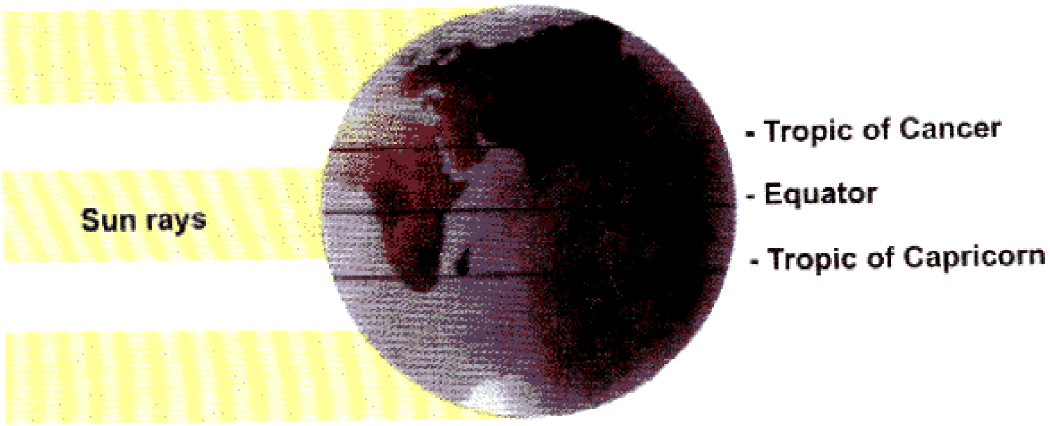


Figure "53"

because of the exceeding cold and dryness; which is also true of the parts that the sun shines on all the time, because of the excessive heat and dryness. Places inhabited by animals and where plants grow are those where the sun shines on at times and does not shine on at others, the most moderate being those which all four seasons come over, one after the other, and where there are the two moderate seasons, the autumn and the spring.

High places are colder than the ones at sea-level, because the air in high places is less dense, and so it does not conserve heat. This is the explanation why some high mountains, even in hot regions, remain covered with snow all the year round.

The hottest climate is the tropical regions, falling between the Tropic of Cancer and the Tropic of Capricorn on both sides of the equator. In this region, the sun falls perpendicular some time of the year.

The sun-rays are weakest in the regions of the north and the south poles, because they fall slanting on those regions, and thus cover a wider area.

The sky

Reflect on the sky, look at it time after time. You can see how it is one of the greatest signs in its highness, elevation, spaciousness and stability; it does not rise like fire, nor does it sink down like heavy bodies. It has no props to support it, nor pegs to hold it from above: it is held by the power of Allah, who holds the heavens and the earth lest they vanish. Reflect, too, on its smoothness and fineness, on its having no crack, no rift or a slit, no raggedness or curveness. Consider also the colour it is destined to have, which is one of the best and most adapted to the eye and most healthful; a person who suffers an affliction in his vision is recommended to gaze long at the green and dark green. Physicians say: One way of dealing with weakened vision is to gaze long at a green bowl filled with water. Observe how the colour of the sky is made of this colour, so that one can look long at its vast expanse, and is not exhausted after long staring at it. This is just some of the benefits of this colour, but it is just a fraction of the whole wisdom in that respect.

Name of planet	Diameter in km	Average distance from sun in millions of km	Number of moons	Time for orbiting the sun (year)	Time for rotating around axis (day)
Mercury	4900	57.8	–	88 days	59 days
Venus	12200	108	–	224.7 days	243 days
Earth	12200	149.7	1	365.3 days	23 h & 56 m
Mars	6780	227.8	2	687 days	24 h & 50.5 m
Jupiter	142900	779	13	11.9 years	9 h & 50.5 m
Saturn	120050	1430	10	29.5 years	10 h & 14 m
Uranus	49000	2868	5	84 years	10 h & 50 m
Neptune	47000	4508	2	164.8 years	15 h & 50 m
Pluto	5800	5908	–	247.7 years	6 days & 9 h

Facts and figures

Comets, 'dirty snowballs' in space

The comets appear as hurtling glowing balls in the sky with tails that can extend as long as millions of kilometers. The nucleus of a comet is a mass consisting of a conglomerate of solid particles and hard ice; the nucleus is embedded in a nebulous disk of gases. The diameter of the gaseous disk can be 80,000 km. The rays of the sun have the effect of ejecting gas from the disk, and so it recedes from the comet, forming a long luminous tail in space.

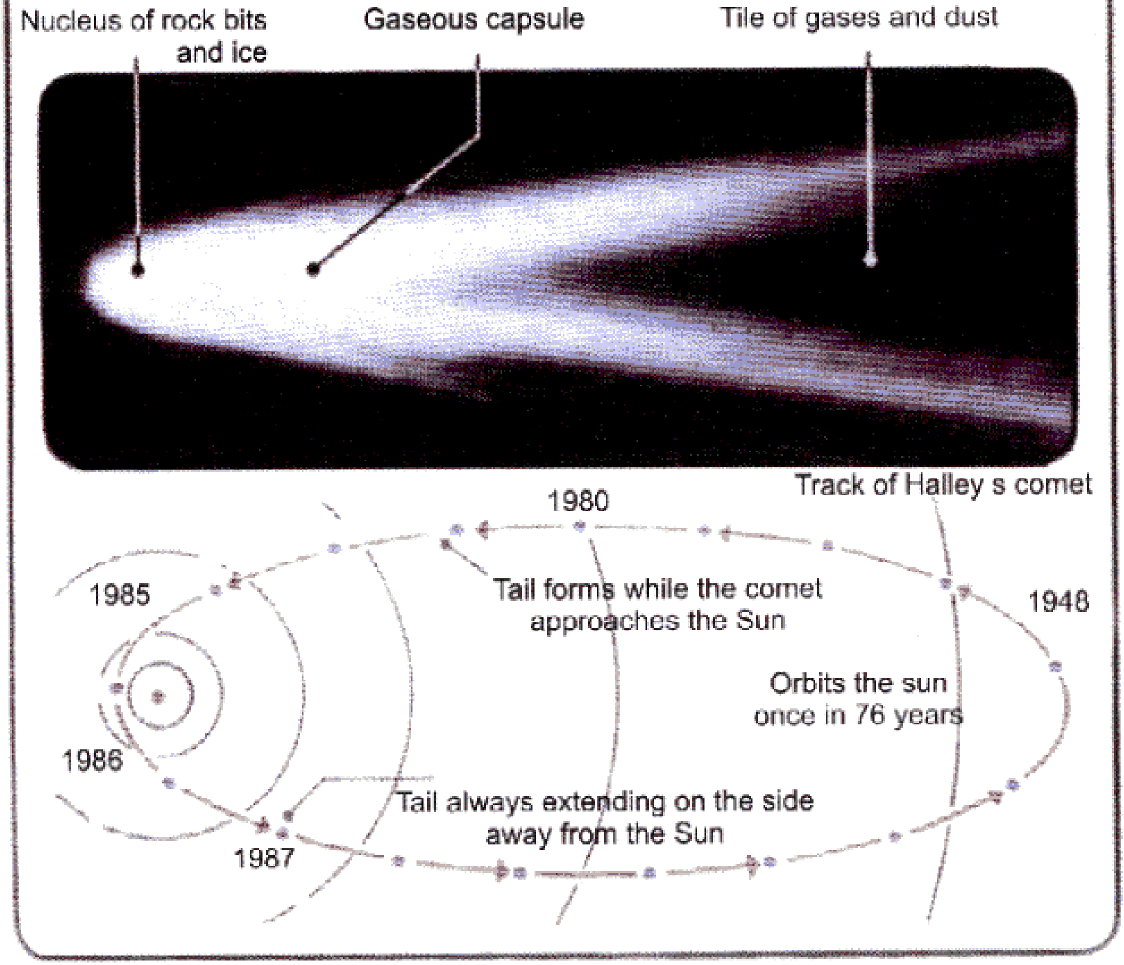
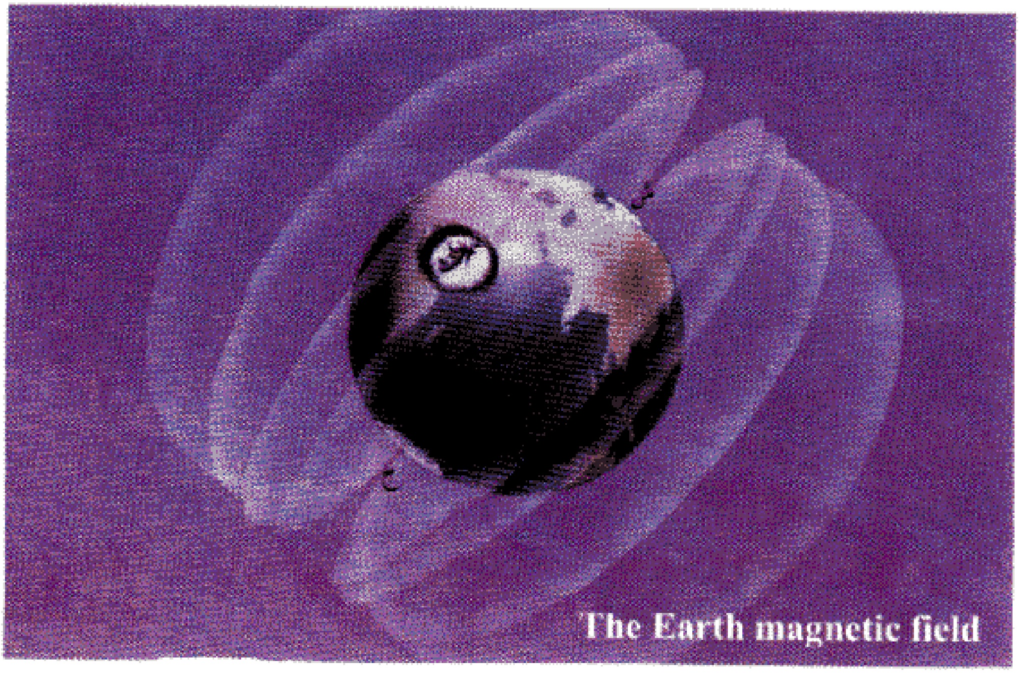
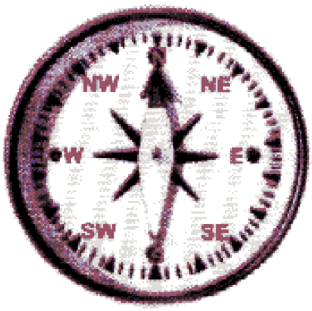

Nucleus of rock bits and ice
Gaseous capsule
Tile of gases and dust
Track of Halley s comet
1980
1985
1948
Tail forms while the comet approaches the Sun
Orbits the sun once in 76 years
1986
Tail always extending on the side away from the Sun
1987

Figure "54"

Like all other bodies in the sky, the earth has a pulling force that we call the earth gravity. That gravity in attracted to the earth, and accounts for the falling of things towards the earth.


The Earth magnetic field

The earth, with its two poles, is also like a huge magnet. It causes the needle of a compass always to point towards the north magnetic north, which is not exactly the same as the geographic north.



The compass

Figure "55"

The Solar System

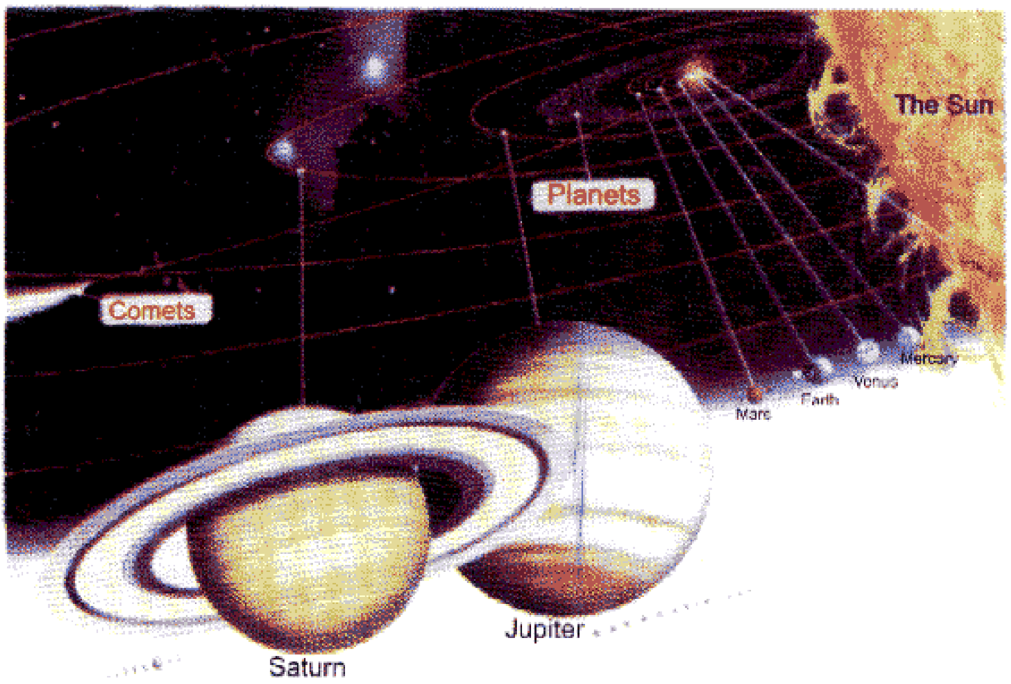

The Sun
Planets
Comets
Mercury
Venus
Earth
Mars
Jupiter
Saturn

Figure "56"

The way to thinking and reflection – focusing the mind for that purpose

Reflect then on the orbiting bodies, the sun, the moon, the stars and the constellations; think how they spin around the world incessantly until the end of time, controlled by an exact system; think of the consequences of all this, the difference of day and night, the seasons, and the heat and cold; what benefits all that realizes for the animals and the plants in the earth. Is it possible that a person with insight should remain ignorant that all that is the making of the Maker, the Wise, and the designing of the Proud, the Knowing? It is for this that the messengers of Allah addressed their peoples in a tone that admits no doubt about Allah; they spoke directly of confining worship to Allah alone; they did not mention admitting His existence, for it is self-evident. They said, as the Qur'an recounts:

﴿أَفِي ٱللَّهِ شَكٌّ فَاطِرِ ٱلسَّمَٰوَٰتِ وَٱلْأَرْضِ . . .﴾ [إبراهيم: ١٠]

"Can there be doubt concerning Allah, the Creator of the heavens and the earth?..." (14: 10).

The existence of the Almighty and His Lordship and Power are absolutely the most evident thing; they are more obvious to the insight than the sun is to the eyes, clearer to the minds than all that they can comprehend and admit. No one denies Him but someone who is contradicting his tongue, heart, mind and innate nature; all those organs renounce him as liar. Let's read concerning these concepts the following verses from the Qur'an:

﴿ٱللَّهُ ٱلَّذِي رَفَعَ ٱلسَّمَٰوَٰتِ بِغَيْرِ عَمَدٍ تَرَوْنَهَا ثُمَّ ٱسْتَوَىٰ عَلَى ٱلْعَرْشِ وَسَخَّرَ ٱلشَّمْسَ وَٱلْقَمَرَ كُلٌّ
يَجْرِي لِأَجَلٍ مُّسَمًّى يُدَبِّرُ ٱلْأَمْرَ يُفَصِّلُ ٱلْأَيَٰتِ لَعَلَّكُم بِلِقَآءِ رَبِّكُمْ تُوقِنُونَ (٢) وَهُوَ ٱلَّذِي
مَدَّ ٱلْأَرْضَ وَجَعَلَ فِيهَا رَوَٰسِيَ وَأَنْهَٰرًا وَمِن كُلِّ ٱلثَّمَرَٰتِ جَعَلَ فِيهَا زَوْجَيْنِ ٱثْنَيْنِ يُغْشِي ٱلَّيْلَ
ٱلنَّهَارَ إِنَّ فِي ذَٰلِكَ لَأَيَٰتٍ لِّقَوْمٍ يَتَفَكَّرُونَ (٣) وَفِي ٱلْأَرْضِ قِطَعٌ مُّتَجَٰوِرَٰتٌ . . .﴾
[الرعد: ٢-٤]

"Allah it is Who raised up the heavens without visible supports, then mounted the Throne, and compelled the sun and the moon to be of service, each runs unto an appointed term; He details the revelations, that haply you may be certain of the meeting with your Lord.

"And He it is Who spread out the earth and placed therein firm hills and flowing streams, and of all fruits He placed therein two spouses (male and female). He covers the night with the day. Lo! herein verily are portents for people who take thought.

"And in the Earth are neighbouring tracts ..." (13:2- 4).

﴿ إِنَّ فِي ٱلسَّمَٰوَٰتِ وَٱلۡأَرۡضِ لَأٓيَٰتٖ لِّلۡمُؤۡمِنِينَ ○ وَفِي خَلۡقِكُمۡ وَمَا يَبُثُّ مِن دَآبَّةٍ ءَايَٰتٞ لِّقَوۡمٖ يُوقِنُونَ
○ وَٱخۡتِلَٰفِ ٱلَّيۡلِ وَٱلنَّهَارِ وَمَآ أَنزَلَ ٱللَّهُ مِنَ ٱلسَّمَآءِ مِن رِّزۡقٖ فَأَحۡيَا بِهِ ٱلۡأَرۡضَ بَعۡدَ مَوۡتِهَا وَتَصۡرِيفِ
ٱلرِّيَٰحِ ءَايَٰتٞ لِّقَوۡمٖ يَعۡقِلُونَ ○ تِلۡكَ ءَايَٰتُ ٱللَّهِ نَتۡلُوهَا عَلَيۡكَ بِٱلۡحَقِّۖ فَبِأَيِّ حَدِيثِۭ بَعۡدَ ٱللَّهِ وَءَايَٰتِهِۦ
يُؤۡمِنُونَ ﴾ [الجاثية: ٣-٦]

"Lo! in the heavens and the earth are portents for believers. And in your creation, and all the beasts that He scatters in the earth, are portents for people whose faith is sure.

"And the difference of night and day and the provision that Allah sends down from the sky and thereby quickens the earth after her death, and the ordering of the winds, are portents for people who have sense. These are portents of Allah which We recite unto you (Muhammad) with truth. Then in what fact, after Allah and His portents, will they believe?" (45: 3-6)

﴿ خَلَقَ ٱلسَّمَٰوَٰتِ بِغَيۡرِ عَمَدٖ تَرَوۡنَهَاۖ وَأَلۡقَىٰ فِي ٱلۡأَرۡضِ رَوَٰسِيَ أَن تَمِيدَ بِكُمۡ وَبَثَّ فِيهَا مِن كُلِّ
دَآبَّةٖۚ وَأَنزَلۡنَا مِنَ ٱلسَّمَآءِ مَآءٗ فَأَنۢبَتۡنَا فِيهَا مِن كُلِّ زَوۡجٖ كَرِيمٍ ○ هَٰذَا خَلۡقُ ٱللَّهِ فَأَرُونِي
مَاذَا خَلَقَ ٱلَّذِينَ مِن دُونِهِۦۚ بَلِ ٱلظَّٰلِمُونَ فِي ضَلَٰلٖ مُّبِينٖ ﴾ [لقمان: ١٠، ١١]

"He has created the heavens without supports that you can see, and has cast into the earth firm hills, so that it quakes not with you; and He has dispersed therein all kinds of beasts. And We send down water from the sky and We cause plants of every goodly kind to grow therein.

"This is the creation of Allah. Now show me that which those you worship beside Him have created. Nay, but the wrongdoers are in error manifest." (31: 10- 11)

﴿ خَلَقَ ٱلْإِنسَٰنَ مِن نُّطْفَةٍ فَإِذَا هُوَ خَصِيمٌ مُّبِينٌ ○ وَٱلْأَنْعَٰمَ خَلَقَهَا لَكُمْ فِيهَا دِفْءٌ وَمَنَٰفِعُ وَمِنْهَا تَأْكُلُونَ ﴾ [النحل: ٤، ٥]

"He has created man from a drop of fluid, yet behold! he is an open opponent. And the cattle has He created, whence you have warm clothing and uses, and whereof you eat." (16: 4-5)

﴿ أَفَمَن يَخْلُقُ كَمَن لَّا يَخْلُقُ أَفَلَا تَذَكَّرُونَ ﴾ [النحل: ١٧]

"Is He then Who creates as him who creates not? Will you not then remember?" (16: 17)

Observe how He focuses on a single theme in this verse:

﴿ هُوَ ٱلَّذِىٓ أَنزَلَ مِنَ ٱلسَّمَآءِ مَآءً لَّكُم مِّنْهُ شَرَابٌ وَمِنْهُ شَجَرٌ فِيهِ تُسِيمُونَ ﴾
[النحل: ١٠]

"He it is Who sends down water from the sky, whence you have drink, and whence the trees on which you send your beasts to pasture!" (16: 10)

while He concludes the same verse with a reference to the thinking group. The single note in the verse is because the point of interest is single, the water which falls from the sky, by which all that is mentioned in the verse grows from the ground; all the mentioned plants with their variety have a single germinator and are born of the same mother, so they are all one type of His signs.

As for confining the benefitters to the thinking group, that is because the creatures mentioned are thoughtful beings, that it, they contemplate by the heart and not mere spectators; a looker on does not benefit by mere looking with the eye, unless it is coupled with the attention of the heart, which ponders the wisdom of what it sees, the splendour of creation, and its pointing to the Creator and Maker. This is the core of thinking. As for this clause in the verse quoted above :

﴿ إِنَّ فِي ذَٰلِكَ لَآيَاتٍ لِقَوْمٍ يَعْقِلُونَ ﴾ [الرعد : ٤]

"herein verily are portents for people who have sense," (13: 4) it covers all the preceding verses, because they refer to the day and night, the sun; the moon and the stars; all of which are different, varied signs in their structure, their creation and their qualities; the setting of the sun and the resultant darkness of the atmosphere embody manifest signs; the coming of the night, which covers the world like an apparel worn by it, bringing tranquillity to the creatures it covers, is a glowing sign; the arrival of the army of light, heralded by the harbinger of morning, when the army of dark is defeated, animals spread, and all dimness is removed, is another sign; the moon, the miracle of night, is another sign; the stars embody other signs as detailed above. There are besides other signs associated with this above and beyond the previous ones, including the winds with their variation and all that they cause of other signs. It is here fit to bring together the major portents of creation, and these portents are directed to the thinking people, because the signs mentioned in this context are more compelling than the preceding ones, and are more physically massive; the previous ones are preparatory to these, so those who find in them guidance and give them their due of significance are worthy of being described as persons of thought, which is the mind. Because the status of intellect subsumes thought, those who are guided by the earlier signs to exercise thought are promoted in the next sign, which is more impressive, to the status of intellect, which is higher than thought. So, here is something for you to think over.

As for the following words from Surah An-Nahl, a little further down from the part quoted above:

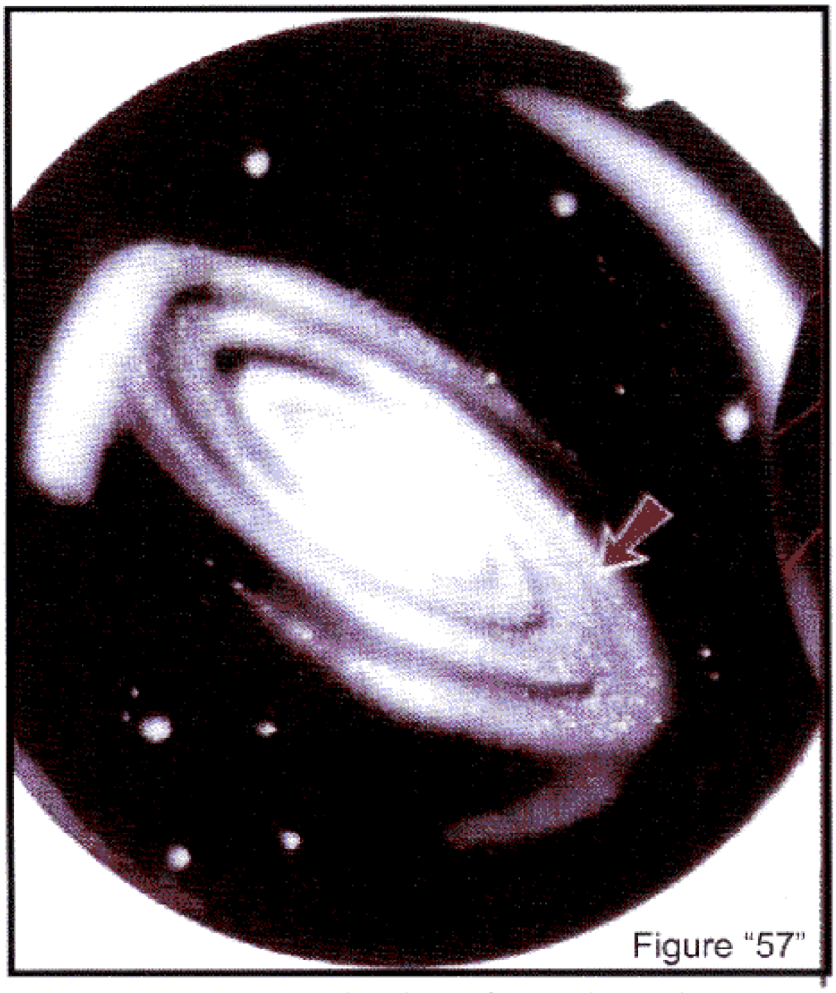
﴿إِنَّ فِي ذَٰلِكَ لَآيَةً لِّقَوْمٍ يَذَّكَّرُونَ﴾ [النحل: ١٣]

"Therein is indeed a portent for people who take heed" (16: 13), the discussion is in singular terms, and at the same time it addresses those who remember. Its singularity is identical with the previous one; what Allah has spread in the ground in its variety, precious stones, plants, minerals, and animals are all on the same place; they all are the same type of sign despite the diversity of their apparent shapes and types. Reserving it to the people of remembrance alone is in line with the Qur'anic method of using Allah's signs for thinking and remembrance; as we read in a similar context in Surah Qaf:

﴿وَالْأَرْضَ مَدَدْنَاهَا وَأَلْقَيْنَا فِيهَا رَوَاسِيَ وَأَنبَتْنَا فِيهَا مِن كُلِّ زَوْجٍ بَهِيجٍ ○ تَبْصِرَةً وَذِكْرَىٰ لِكُلِّ عَبْدٍ مُّنِيبٍ﴾ [ق: ٧، ٨]

"And the earth have We spread out, and have flung firm hills therein, and have caused of every lovely kind to grow thereon. A vision and a reminder for every penitent slave," (50: 7-8).

Vision is reflection and remembrance, and thought is the means to that and the first stage of it. If one thinks, he will gain insight; when he gains insight he will remember. In the above verse, remembrance is mentioned as a stage following the intellectual effort, and the latter is based on thought. Thought is given as the first stage, as being the first stage and the means, intellect occupies a middle ground as being the fruit and result of thought, while remembrance is kept to the end, since it is the aim of thought and intellect. So, here you have food for good thought.



The arrow points to the place of our solar system in our galaxy, our world being just a particle of dust in it.

Stellar radiation

Various stars have their specific types of radiation; many of those types are fatal to all known living beings. Radiation varies also as to intensity and amount by a range of thousands of times. As for our sun, if its radiation were to diminish to half its present amount, we would freeze. If it increased by half its present amount, we would have burned to ashes a long time ago. From this it will be manifest that our sun is the single sun among the millions of suns that is fit for our life. Do you not think that these facts are worth pondering?

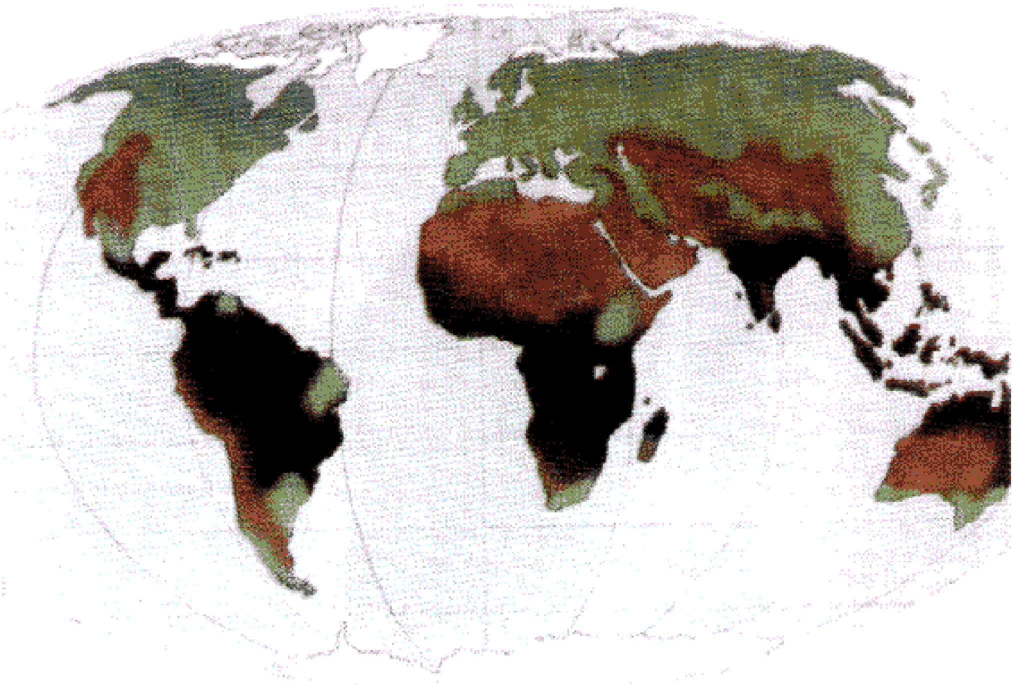

Moderate region
Deserts
Tropical forest
Tundra(polar planes)
Ice

Figure '58"

The earth comes into being

If it is right the temperature of the earth at the time of its separation from the sun was about 12,000 F, the same as the surface temperature of the sun, all elements were free, which means that no significant chemical reaction was possible. When the earth, or its components, started to cool down gradually, reactions started to take place, and the world as we know it began to take shape. Oxygen and hydrogen would not have combined until the temperature fell to 4000 F. At this point, these two elements combined to form water, but it was in the form of vapour engulfing the earth. It must have been of immense volume at that time; all the oceans were still in the sky; all the elements had not yet combined; they were gases in the atmosphere. After water formed in space, it began to fall on the earth; but it could not reach it at first, as temperature close to land was higher than it was thousands of miles away. The time came, however, when floods did reach the earth, but they rose again as vapour. As all oceans were still suspended in the sky, the floods that took place with progressive cooling were unimaginable. The turbulence was accompanied with fragmentation, and a state of infinite chaos reigned for millions of years. But during this state of unthinkable disorder, oxygen was combining with many of the other elements; it combined for instance with available hydrogen and in this way oceans came into being. No doubt, enormous amounts of hydrogen escaped from earth gravity before this process of cooling down; otherwise the mass of water would have been so colossal that it would have drowned the earth several miles deep. It seems that things calmed down and settled about a billion years ago, and this paved the way for dry land and oceans, and the atmosphere, that close-to-earth layer that we call air. The combination of elements was so complete that what was left, i.e. air that consists mainly of oxygen and nitrogen, consists no more than one millionth of the earth's mass.

Remembrance and thought

What is the difference, you may ask, between remembrance and thinking? Recognizing the difference is beneficial to those who realize it. In answer to this I say: Thinking and remembrance are the basis of guidance and success, the two poles of happiness. That is why we expatiated on thinking because of the great benefit connected to it and the great need for it. It is as Al-Hasan said: People of knowledge have always based remembrance on thought and thought on remembrance, and they addressed hearts until they came to be articulate, and they acquired hearing and vision.

Let it be known, then, that thinking is the search by the heart to acquire from the knowledge already attained, knowledge that is not yet acquired. This is the reality about thought, because if there is no objective to be sought by thinking, then thinking will be impossible; thinking without a focal destination is not possible; and the means to it is the facts that are already acquired. If those means are employed to acquire that which is already known there will be no thought. Realizing this, we may go on to say that a thinking person proceeds from premises and assumptions he already knows to the concept he seeks to unveil. Once that is attained and acquired, he remembers on the basis of that, and perceives what to seek and what to shun; what to hold as dear and what to avoid. Remembrance, then, is the eventual fruit and outcome of thinking. Once a person has remembered, that remembrance enhances thinking, and so he can make inferences that he was unable to make before. This reciprocal relationship goes on, from thinking to remembrance and from remembrance to thinking, as long as reflection lasts: knowledge and the will have no limit to stop at, and a person can progress indefinitely drawing on knowledge and will. If you realize that the Lord's signs operate as eye-openers and reminders, enlightening one to overcome the heart's blindness and to awaken it from its forgetfulness, it will then be clear that the opposite of knowledge is either the heart's blindness, and the remedy for this is enlightenment, or its forgetfulness, and the remedy for this is remembrance. The idea here is to awaken the heart from its forgetfulness by invoking some of Allah's signs. To try to follow that up to its end, we would have to devote all our life to it, and even then we would not be able to exhaust even the details of one of His signs comprehensively. But if the whole is not feasible, it should not follow that the matter should be dropped completely. The noblest employment of time and effort is the reflection on the signs of Allah and the wonders of His creation, to go on from there to linking the heart and will to Him rather than to any of His creations.

Ask, then, the denier, the annihilist: What do you say of a water-wheel spinning over a river, a water-wheel of perfect parts, exquisitely manufactured, most delicately and sophisticately made, in a way that an observer can see no loophole in matter or making, efficiently irrigating a spectacular orchard that contains all kinds of plants and fruits; the orchard being well cared for, pruned, weeded, and well served in every way; so that nothing is left missing or ignored, no fruit is left to rot; and then its product is estimated by the harvester and the money gained is distributed to the various parties concerned according to their needs and requirements, each getting what is right for them, and all the above is done every time – would you say that all this might happen by coincidence without an agent who has will and resolution? Would you say that the wheel and the orchard are there by coincidence, with all that goes on there without an actor who has will and resolution? What would your mind say of that? How would it solve the riddle? What would it lead you to? Of such a person we say it is of the wisdom of the Proud, the Wise that He created blind hearts that have no vision, so that they do not perceive those compelling signs except the way they are sensed by the senseless animals; He created eyes that do not see; the sun, the moon and the stars are moving by His will, but they do not see them; so why should one blame them if they deny their existence and fail to believe in them? They would say of the daylight 'it is indeed night, but the sighted are deluded.' It is just as a poet put it:

> Suppose that I say of the morning it is night,
>
> will the sane be blind to the broad day light?

Reflect, again, upon the Power that holds the heavens and the earth, He who preserves them from falling apart, from crumbling or from some of their bodies going astray; Who is that Holder? Who oversees all that? Who is their Keeper? If some parts of that great wheel mentioned above are broken or some parts of the orchard fail to produce who will maintain them? Who among all the creation has the power to put things back on track? If the Keeper of the heavens and the earth and the sun holds back some of His sustenance, and lets the night last forever, who can cause the sun to rise again and can bring the day back? If He holds the sun in the horizon and keeps it there without moving, who can bring it to move so that the night should come? If the sky and the earth should fall down who but He can keep them in their place?

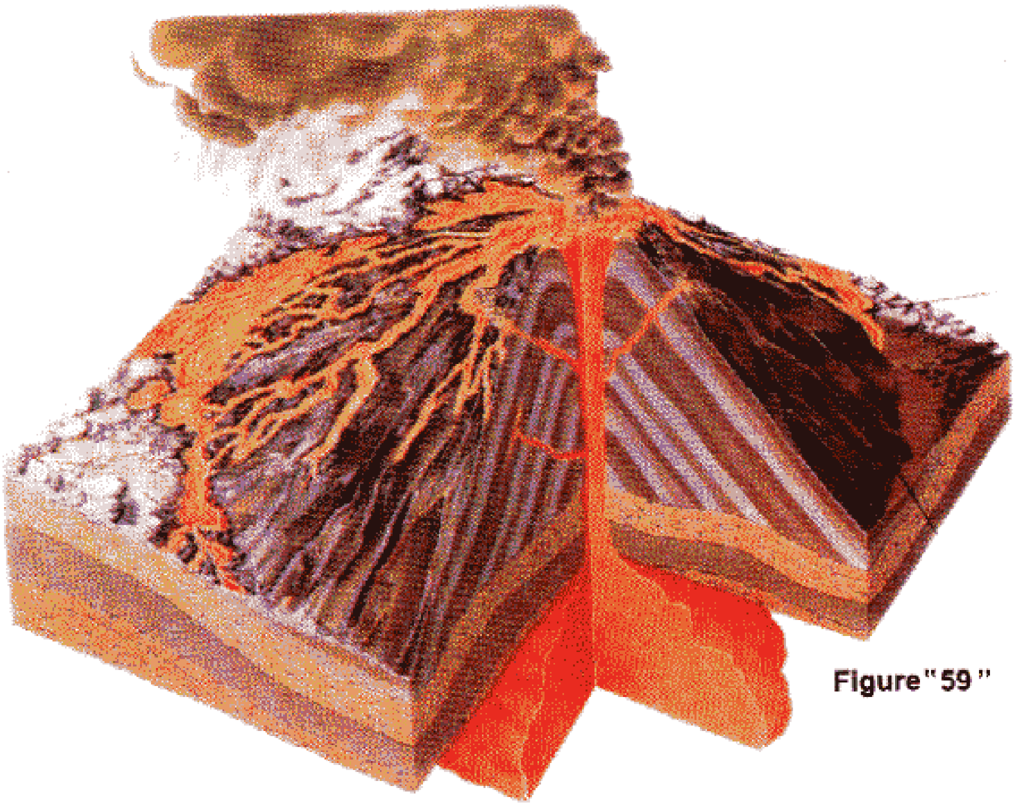


Figure "59"

Volcanoes appear as conical mountains. Lava and extremely hot gases may erupt from the mantle an inner layer of the earth, through faults and fractures that it erupts exist between layers. Once the lava reaches the surface of the earth it erupts upwards.

Earthquakes are also a result of the movement of blocks. If violent, earthquakes are also a result of the movement of block. If violent, earthquakes can destroy entire cities. Shaking may, however, be just a tremor.

Chapter Three

Animals

﴿ وَٱلَّذِى خَلَقَ ٱلۡأَزۡوَٰجَ كُلَّهَا وَجَعَلَ لَكُم مِّنَ ٱلۡفُلۡكِ وَٱلۡأَنۡعَٰمِ مَا
تَرۡكَبُونَ ○ لِتَسۡتَوُۥاْ عَلَىٰ ظُهُورِهِۦ ثُمَّ تَذۡكُرُواْ نِعۡمَةَ رَبِّكُمۡ إِذَا ٱسۡتَوَيۡتُمۡ
عَلَيۡهِ وَتَقُولُواْ سُبۡحَٰنَ ٱلَّذِى سَخَّرَ لَنَا هَٰذَا وَمَا كُنَّا لَهُۥ مُقۡرِنِينَ ﴾

[الزخرف: ١٢، ١٣]

"He Who created all the pairs, and appointed for you ships and cattle whereupon you ride.

"That you may mount their backs, and may remember your Lord's favour when you mount thereon, and may say: Glorified be He Who has subdued these unto us, and we were not capable of subduing them."

Al-Qur'an (43:12,13)

The creation of animals

Ibn Al-Qayyem says:

One class of the signs of the Almighty is the creation of animals, with all their qualities, species, appearances, uses and services, colours, and other unseen wonders. Some creep on their belly, some walk on two feet, some on four; some have their defence in their feet, the claws; some in the beaks, like the eagle, the Egyptian eagle, and the crow; some in their teeth; some have horns by which they ward off those who seek to subdue them; some, the lion for instance, have enough power to defend themselves without arms, their power being their weapon; some use defecation for defence, as does a certain species of bird which if an enemy approaches it with the intent of subduing it, it defecates on it and destroys it in this way[1]. I propose here to present a brief selection of depictions. There will be some overlap and no particular order. It is, however, one of the most important chapters of this book, since it will discuss some of the most vital issues raised by the Qur'an. The Qur'an reiterates many of the signs, stresses them time and again, exhorting humans to reflect on them with insistence. This is in fact one of the most basic of the Qur'anic themes. Let us review just a few of the general statements in the Qur'an concerning this:

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[1] The species of animals are so numerous that their number exceeds a million, insects being the majority. Here are some details:

Insects are approximately 800, 000 species
Fishes are 30, 000 species
Birds are 9000
Reptiles are 6000 species
Mammals are 4000

There are in addition, the bacteria (a unicellular creature), and viruses (another unicellular creature), the smallest organisms; it would take a quarter of a million viruses, for instance, to cover a dot like this. So glory be to Him who created the whale and the virus, arranging for each to obtain its food.

﴿ قُلِ ٱنظُرُواْ مَاذَا فِى ٱلسَّمَٰوَٰتِ وَٱلْأَرْضِ ۚ . . . ﴾ [يونس : ١٠١]

"Say: Behold what is in the heavens and the earth!" (10: 101)

﴿ إِنَّ فِى خَلْقِ ٱلسَّمَٰوَٰتِ وَٱلْأَرْضِ وَٱخْتِلَٰفِ ٱلَّيْلِ وَٱلنَّهَارِ لَءَايَٰتٍ لِّأُو۟لِى ٱلْأَلْبَٰبِ ﴾

[آل عمران : ١٩٠]

"Lo! In the creation of the heavens and the earth and the difference of night and day are tokens of His sovereignty for men of understanding." (3: 190)

﴿ أَفَلَا يَنظُرُونَ إِلَى ٱلْإِبِلِ كَيْفَ خُلِقَتْ ○ وَإِلَى ٱلسَّمَآءِ كَيْفَ رُفِعَتْ ○ وَإِلَى ٱلْجِبَالِ كَيْفَ نُصِبَتْ ○ وَإِلَى ٱلْأَرْضِ كَيْفَ سُطِحَتْ ﴾ [الغاشية : ١٧ - ٢٠]

"Will they not regard the camels how they are created? And the heaven, how it is raised? And the hills, how they are set up? And the earth, how it is spread?" (88: 17-20)

The subduing of animals

Consider the impressive wisdom invested in the Lord's bestowing on animals hearing and vision to enable them to go about their interests and, eventually, to give their services to man. If they were blind or deaf they would not be of use to man. On the other hand, He denied them the intellect that man has, despite their big bodies; this is of course how they can be domesticated by man, who guides them and directs them wherever he likes. If they had intellects, with their extra size, they would for sure have disobeyed man, and would have defied his control. As it is, they have been given such understanding and perception as would serve to realize their needs, and eventually the needs of the species they are destined to be controlled by; on the other hand, they have been made to lack the intellect and understanding that gives man superiority over them; and this also underscores the priority and prestige of man. Observe how man leads them and subdues them despite their bulk, while he would not have been able to control them without that subduing. Let us refer now to some verses of the Qur'an in that connection:

﴿وَجَعَلَ لَكُم مِّنَ ٱلْفُلْكِ وَٱلْأَنْعَٰمِ مَا تَرْكَبُونَ ○ لِتَسْتَوُۥا عَلَىٰ ظُهُورِهِۦ ثُمَّ تَذْكُرُوا نِعْمَةَ رَبِّكُمْ إِذَا ٱسْتَوَيْتُمْ عَلَيْهِ وَتَقُولُوا سُبْحَٰنَ ٱلَّذِى سَخَّرَ لَنَا هَٰذَا وَمَا كُنَّا لَهُۥ مُقْرِنِينَ﴾

[الزخرف: ١٢، ١٣]

"And (He) appointed ships and cattle whereupon you ride. That you mount upon their backs, and may remember your Lord's favour when you mount thereon, and may say: Glorified be He Who has subdued these unto us, and we were not capable of subduing them." (43: 12-13)

﴿أَوَلَمْ يَرَوْا أَنَّا خَلَقْنَا لَهُم مِّمَّا عَمِلَتْ أَيْدِينَآ أَنْعَٰمًا فَهُمْ لَهَا مَٰلِكُونَ ○ وَذَلَّلْنَٰهَا لَهُمْ فَمِنْهَا رَكُوبُهُمْ وَمِنْهَا يَأْكُلُونَ﴾ [يس: ٧١، ٧٢]

"Have they not seen how We have created for them of Our handiwork the cattle, so that they are their owners, and have subdued them unto them, so that some of them they have for riding, some for food?" (36: 71-72)

You see how the camel, with its great bulk, is led by the little boy, humble and meek. If the camel were to attack the boy it would crush it like an egg and tear its limbs apart! So ask the denier: Who subdued it and subjugated it and led it with all its strength to a weak human, one of the weakest of creatures. By such employment, the human species can devote their time to their worldly and other-world interests. If man had to do the work the animal does, and carry loads that the animal carries that would consume so much of his time, he would not be able to do the constructive work he does: instead of one camel, he would need a group of people to carry his burdens; indeed not even a group of people can carry what one camel carries; besides, it would take up their time and not leave them time to attend to their interests. Those animals have been created to do hard work for humans, besides the countless ways in which they serve humans: providing food, drink, medicine and clothing; stuff from their bodies are used for making containers, machines and utensils; they are means of transport and plowing; and they provide many other benefits; add to the beauty of some animals.

Providing tools of manipulation

Consider the wisdom embodied in the provision of tools of manipulation to animals and man. Since man was created to practice many industries like masonry, sewing, writing and so forth, he was provided with a flat round hand and fingers that enable him to hold, spread, fold, unfold, gather, scatter, join something to another; the animal, on the other hand, was not destined to practice similar industries, and so it was not provided with a hand and fingers similar to a human's. Because some animals, like wild animals, are carnivorous, they were provided with slender, close-built hands with claws or talons adapted to the catching of preys, not for industries. This is so in carnivores; herbivores, on the other hand, are destined not to catch other animals, nor do they have an industry; and so some have hooves that protect them from the roughness of land while they are roaming the meadows grazing; some have close-built hooves with an arch like human feet, so that they may be placed on the ground; they are destined to carry and transport, and do not need claws or canine teeth for obtaining food, and so they do not have them.

Providing canine teeth and claws

Consider the creation of carnivorous animals, the wisdom embodied in their having sharp teeth, strong claws and large mouths. They have been provided with arms and tools that are adapted to catching preys and eating. That is why you see the birds of prey with sharp beaks and talons like hooks. That is also why the Prophet ﷺ prohibited eating all beasts with fangs and all birds of prey[2], due to its being offensive, aggressive and destructive. As an eater takes on qualities from the stuff he eats, man would take on the traits of the birds of prey were he to eat their meat, and would be aggressive and destructive like them. That is why the Muslim *ummah* (nation) is forbidden to eat that flesh. The hyena, on the other hand, though having canine teeth, is not forbidden to eat, as it is not considered by any nation as a predator: prohibition is confined to animals with the two qualities of having fangs and being a predatory animal. It is not said that this is conversely applied in the case of predatory animals without fangs, as they are absolutely non-existent.

May peace and blessing be on the Prophet who spoke with concise statements, who made plain the teachings and expounded the permitted and the prohibited.

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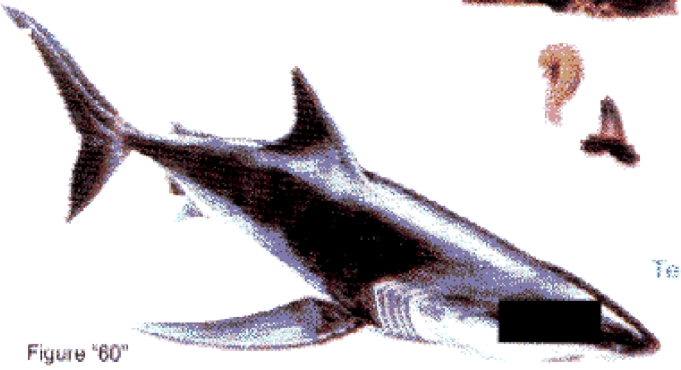
[2] As in a tradition reported by Muslim and Ahmad, among others.

Tools of manipulation of animals

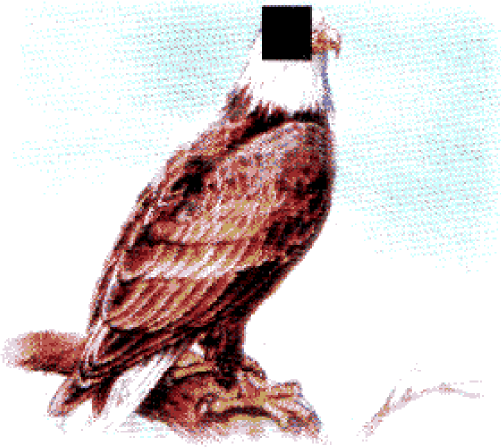
Claws of the bear

Figure "61"



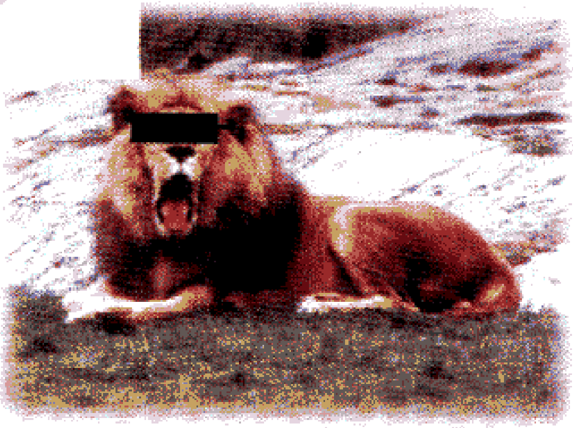
Teeth of the shark

Figure "60"



Beak and claws of the Eagle

Figure "63"



Fangs of the Lion

Figure "62"

The wisdom of commandment and the wisdom of creation

Reflect on the wisdom of the Almighty Allah in His creation and commandment, in what He created and in what He decreed; and you will discover in all that a great source of wisdom that speaks of a foolproof system that never fails, nor does it have any loophole. Some people perceive the wisdom of commandment more than they notice the wisdom of creation – these are the select among Allah's servants, who have well comprehended what Allah ordained of injunctions and religion, and realized His wisdom in what He excelled in designing. Their minds and intellect testify that the basis of what they see is deep wisdom, mercy and benefit for the humans in their worldly and hereafter lives. This class of people, however, are of countless levels that only Allah can reckon. Some humans notice the wisdom of creation more than they notice the wisdom of injunctions, and of this class are the majority of physicians who dedicate their thought to the extraction of the benefits and uses of animals and plants, their potentials and what they can serve, individually and in combinations. Their share in perceiving the wisdom of commandment is equal to or less than the jurists' share in perceiving the wisdom of creation. Another class are blessed with noticing creation and commandment in accordance with their potential and ability: They notice in what they see the exceeding wisdom that overwhelms minds; and as they observe creation and the many aspects of wisdom it implies, they increase in faith, knowledge and endorsement of what the messengers taught. When they consider His commandments and the exceeding wisdom they imply, their faith and submission to the Lord are increased. They are not like those who have been blinded to the Maker by what He made, or blinded by the stars from realizing the star-Maker; those whose vision is blinded, who are barred from the Lord with a thick veil. If these last-mentioned put their knowledge to good use, they would be among the most staunch of believers, having witnessed Allah's wisdom, His most stunning signs, the wonders of His craft that point to Him, to

His knowledge, power, and wisdom that is not available to others. It is, however, of Allah's wisdom that the minds of the majority of this group do not avail their privileged place; they are barred from knowing Him, are stopped at the external aspect of the worldly life, unmindful of the hereafter. These minds are unworthy of being acquainted with Him, His names and Attributes, and the secrets of His religion and legislation, being of base interests, mean and petty. But bounty is in the Hands of Allah, and He extends it to whoever He wills, for Allah is the expender of great bounty. But in this regard, what humans have access to is infinitesimal as compared to what is hidden from them. Indeed, what each and every single human has acquired of knowledge, relative to what they ignore, is equal to the sip of a little bird, relative to the sea. But even so, this is no reason for turning our backs to what we can learn and being desperate about it: a thinking human will find in what he perceives an indication of what lies beyond.

The legs of animals

Consider also the legs of animals and the great wisdom they represent. How the Lord destined that they are in pairs, two or four, not odd. An animal can walk and run, and in this way can go about its interests, which would not be possible had its legs been odd. A walker lifts some legs and supports itself on others; a biped animal lifts one leg and supports itself on the other, and a quadruped lifts two and supports itself on the other two, the two on the opposite side, because if it were to lift two legs on the same side and support itself on the other, it would not be steady on the ground at the moment of lifting its legs, and it would be hopping like a bird, which is harmful and tiring to the animal, though not to the bird. It is clear that if man walks this way for some distance he will be exhausted and fatigued, unlike his normal walking which is the appropriate way for him. Wisdom has determined that he moves his right arm with his left leg and holds back his left arm and his right leg, then he shifts to the other side, which is the easiest and most convenient way of walking for the biped.

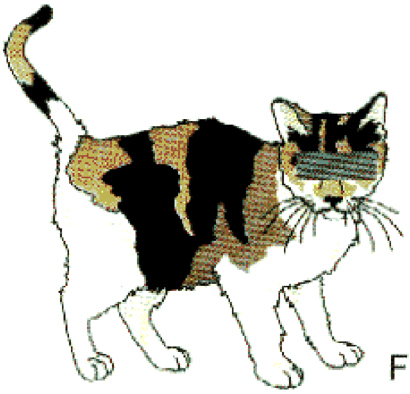


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Figure "64"

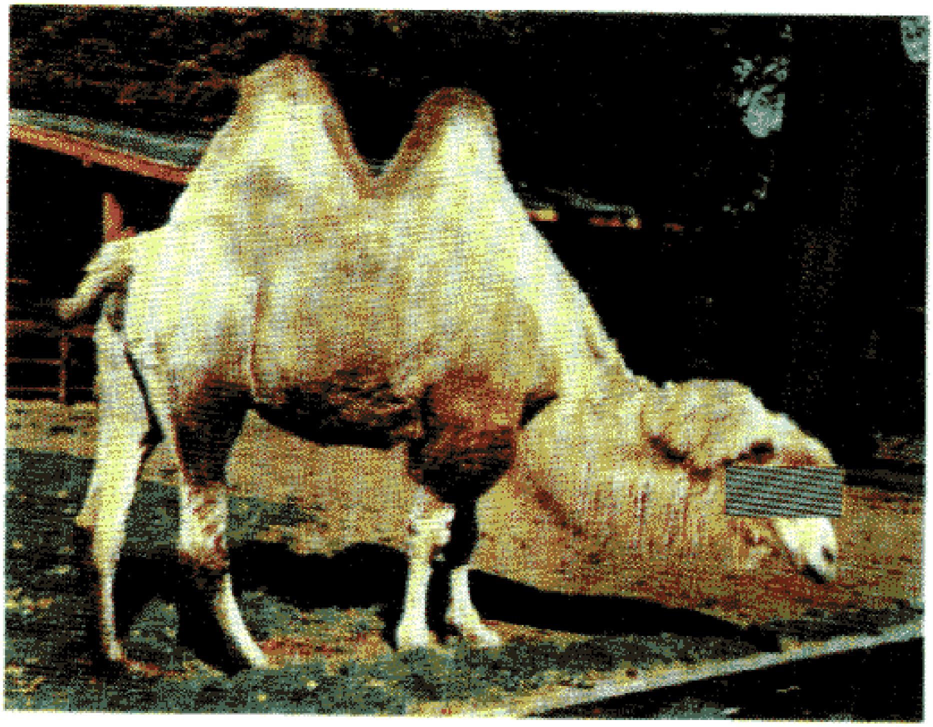

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Figure "65" Bactrian Camel, with two humps

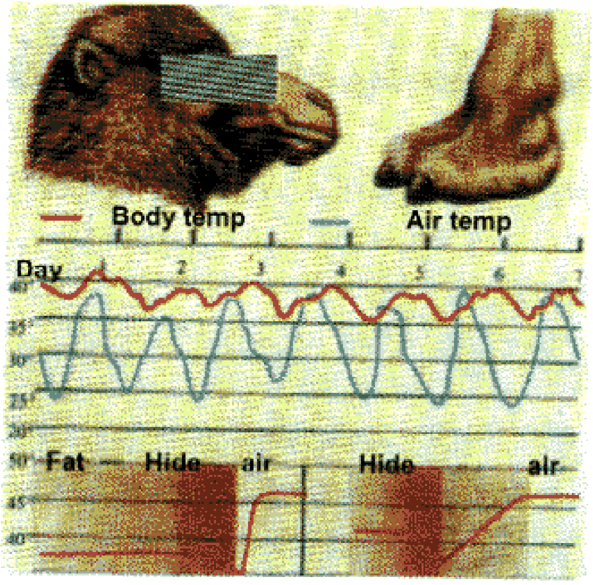

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Figure "66"

The engineer beaver

The dwelling of beavers is a marvelous achievement in both architecture and execution. The beavers take a long time and spend a lot of effort to build a dam across a stream or river which they have selected for their habitation; they need a stream that is deep and clean. They first cut some trees with their sharp, incisive teeth; then they drag them or float them to the appointed spot, where they fasten them. Once the framework of the dam has been built, it is filled with pieces of boughs, rocks and mud. A beavers' dam can be as high as three and a half metres, and as wide as thirty metres.

After they have accomplished building the dam, and water has risen to the suitable depth, beavers build their distinctive habitations; they make islets in the water, surrounded with the deep water, barricade them with a fence, and build over them a roof of twigs and mud. When the weather is freezing, as happens in Canada and northern Europe, where beavers live, the habitation is frozen; in this way it hardens and radiates warmth on the inside. As for the entrances to the habitations, they are provided through bores below water. Such habitations are very secure against the assault of enemies.

The backs of animals

Regard also the deep judgement behind having the backs of transport animals level like a roof built on columns, which is convenient for riding, and for carrying loads. Camels, in contrast, are different, for their backs are humped, having that arched form; for they are designed for extra heavy loads and are provided with special strength. It is known that domes endure weights that level roofs do not endure – it is even said that the idea of making domes came from the backs of camels. Observe also that as the camel is provided with long legs, its neck is also made correspondingly long, so that it can reach grass while the camel is standing. The camel would not have been able to graze if its neck were short. Another reason its neck was made long is that its length balances the burden on the back once the animal starts to go ahead. The situation is somewhat similar to the one you see in the length of the bar of the bar-scale – it is even said the bar-scale was invented in imitation of the camel, by observing the length of its neck and the weight of its burden: you see how it extends its neck as it goes ahead with the burden, as if it were deliberately balancing it.

Men's coat and Animals' coat

Consider how the bodies of animals of lower species have been covered with that hairy, furry, woolly skin; how birds have been covered with feathers, and how some animals have been provided with a strong and tough shell, like the tortoise [3]; some have feathers that are like spears; and see how in every case the covering is adapted to the animal's need for protection from heat, cold, and from enemies that seek to harm it. Since animals are unable to obtain clothes, manufacture garments and coats of arms, they have been supplied with clothing and covering that are permanent, with tools and arms that they can use in self-defense, with hooves, pads and cloven feet in place of shoes and sandals, so that they have their permanent shoes and drinking vessels. The horse, the mule and the donkey were privileged with hooves because they were created to trot, run and race; hooves are also used as weapons, in place of talons, claws and fangs, when these animals want to revenge themselves against their adversary. Reflect, then, on this kindness and mercy: since they are dumb animals that are senseless and have no hands that are adapted for manipulation and defence, and have no share in what humans have of fabrication [1], knitting and subtle skills, they have been provided with their natural cover, so that it accompanies them as long as they live; and have been provided with weapons and tools that help them defend themselves, so that they can fulfill the wise purpose of their creation.

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[3] The Florida tortoise is said to smell the smoke of a fire at a long distance; and since it is very slow-moving, the Almighty Lord guided it to what ensures its safety: it digs a hole for itself, and lets the blazes go above its shell-covered back without being harmed.

As for man, he has skill and a hand that is adapted for industry, so it can knit and spin; he can wear apparel that he can change at will, and that is advantageous in several ways:

– He can rest once he has put off his clothing, and can later put it on when he likes; he is not obliged to wear it all the time.

– He can choose different clothing for summer and winter, as the summer's clothing is unfit for winter, and winter's clothing unfit for summer; so man can use in every season what is suitable in it.

– His clothes are chosen to suit his taste and pleasure.

– He can enjoy the various fashions of clothes in the same way that he enjoys various foods. His clothes have been left to suit his choice in the same way as his foods are. He chooses what he prefers of fabrics, some from plant origin, like cotton and linseed; some from animal origin, like fur, wool, and hair; some from insect origin, like silk; and some from metals, like gold and silver. Such wide variety is open to the human so that he indulges in his pleasure and gratifies his wish for adornment and pruning. That is why the paradise dwellers have their clothing separate from their bodies, clothing that can be worn and removed at will, the same way as it is in this world; not part of their bodies, as is the case with the animals; and this proves that this arrangement is the more favoured, superior, and more generous blessing.

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[1] There is, in fact, a species of birds, called the tailor, which builds its nest from two tree leaves, which it pricks with its beak, then uses twigs or leaves of grass as a thread to sew them, the way a tailor sews clothes.

– Clothing is a distinguishing mark that sets man apart from the lower animals, in the same way that the Lord distinguished man in nutrition, dwelling, expression, mind and comprehension.

– Apparel and body-covering vary in accordance with the variety of situation and occasion; as dictated by industry, peace and war, settling and travelling, health and illness, sleep and wakefulness, and luxury. For every aspect of these, a distinguished apparel and body-cover are used, peculiar to it, adapted only to it. There is no apparel that fits all those aspects, that does not vary with the variation of situation. In this, man has been honoured and raised above all other animals.

The faces of animals

Regard now the exceeding wisdom represented in the particular shapes of the animals' faces. Observe how the eyes are in front of the face; that enables an animal to see in front of it more than any other direction, which helps it protect itself and its rider, avoid running into a wall or falling down a hole. Animals' eyes are in a position similar with that of a standing person, because eyes function as scouts of the animal. Their mouth is a slit below the nose, which helps them bite and hold the fodder. If it were at a level with the nose and above the chin, as it is in man, they would not be able to pickup anything with it from the ground: do you not see how man picks up food with his hand not with his mouth? As an animal does not pickup its food with its hand, its mouth is a cut at the bottom of the head, which enables it to put it onto the fodder, pick it up and then masticate it. Its lips are like man's, but adapted to its particular needs; they help it reach things near and far. The functions of the tail are a mystery to some people; they do not perceive any of its many advantages. It is in fact like a lid over the anus and a covering to the animal's genitals, covering them and hiding them. In addition, the line along an animal's belly, between the anus and the upper part, is a filthy place, where flies and mosquitoes swarm and annoy the animal; and the tail performs here the part of a whisk or a fan that scares the insects away. Another function is that a beast has relief in wagging it to the right and left: It stands on all fours, and its legs are busy carrying the weight of the body, so that they cannot budge or shuffle, and hence it find relief in wagging the tail. There might be, besides, other functions that humans' minds fall short of discerning, and the reader might deny them unless he sees them at the critical time; there is for instance the animal's wallowing in the mud, when nothing helps to get it out more than taking it by its tail.

The multiplicity of animals

There is also a very curious wisdom associated with domestic animals, wild animals, predatory animals and animals in general: that you do not see anything of the remains of their dead despite their great number. They are not so few as to be hidden from sight; scarcity is definitely not the cause. They are said to be more numerous than humans. You may take example from what exists in the wilderness, antelopes, deer, cows, wolves, tigers, all kinds of reptiles and insects in their abundance, the many species of birds which are many times as numerous as humans; but you hardly ever come across their carcasses in their dens, habitations, burrows or meadows; along their tracks, near their drinking-places, hiding places or resorts, or places of ambush; except if any of them gets assaulted unprepared, devoured by a wild animal, or shot by a hunter, in a way that it does not have the chance, nor any of its group, to hide itself at death, to have its carcass concealed. This is a proof that when an animal feels the approach of death, in contrast with sudden demise, it lies where no one can reach its body, and buries its body before death occurs. Otherwise, the desert would be filled with the carcasses of dead animals, the air would be polluted with them, and they would be a great source of trouble to people and a plague would spread among mankind. It is in relation with this that the Almighty recounts in the course of the incident of the son of Adam:

﴿ فَبَعَثَ ٱللَّهُ غُرَابًا يَبْحَثُ فِى ٱلْأَرْضِ لِيُرِيَهُۥ كَيْفَ يُوَٰرِى سَوْءَةَ أَخِيهِ ۚ قَالَ يَٰوَيْلَتَىٰٓ
أَعَجَزْتُ أَنْ أَكُونَ مِثْلَ هَٰذَا ٱلْغُرَابِ فَأُوَٰرِىَ سَوْءَةَ أَخِى ۖ فَأَصْبَحَ مِنَ ٱلنَّٰدِمِينَ ﴾

[المائدة : ٣١]

"Then Allah sent a raven scratching up the ground, to show him how to hide his brother's naked corpse. He said: Woe unto me! Am I not able to be as this raven and so hide my brother's naked corpse? And he became repentant." (5: 31)

As for animals that live with humans, like the cattle and sheep and transport animals, they do not behave the same way as wild animals, because the human skill is involved here which is man's ability to ward off harm from these animals. This should give you food for reflection, how this behaviour that humans sometimes fail to apply properly, defending what is entrusted to them, is part of the instinct of animals, and see how birds can teach it to humans.

Consider, then, the wisdom of the Almighty embodied in His sending to the son of Adam the raven (whose name in Arabic 'ghuraab' indicates the estrangement of the murderer from his brother, his estrangement from Allah's mercy, his estrangement from his father and family, his evading of them and their evading of him). The raven is a bird that humans shun and they shun its croaking; it annoys them. The Lord sent that particular bird to be a kind of teacher and tutor to the son of Adam, and the latter was here a kind of learner and pupil. That we associate here the name, ghuraab, to the wisdom embodied in it should not be disputed; one may cite in this connection the Prophet ﷺ when he said:

«إِذَا بَعَثْتُمْ إِلَيَّ بَرِيدًا فَابْعَثُوهُ حَسَنَ الاسْمِ حَسَنَ الْوَجْهِ»

"If you send me a messenger let him be agreeable in looks, agreeable in name."[2] He used to ask about the name of the land that he decided to stop at and the name of the messenger sent to him. When Suhail bin Amr was sent as negotiator during the Hudaibiah clash the Prophet ﷺ said addressing the Companions:

«قَدْ سَهُلَ أَمْرُكُمْ»

"Your affair has been made smooth"[3] (referring to the name of the envoy Suhail, meaning in Arabic facilitation).

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[2] Rated by Al-Albanee to be an authentic tradition in view of the collective routes of reporters, as in "Al-Saheehah" (3/ 281, tradition 1186).

[3] Reported by Al-Bukharee (5/ 331).

When he decided to change a man's name from Hazn (rough) to Sahl (easy) he said :

«لَمْ يَزَلْ مَعْنَىٰ اسْمِهِ فِيهِ وَفِي ذُرِّيَّتِهِ»

"The meaning of his name will always remain with him and his descendants."[4]

Umar bin Al-Khattab once asked a man about his name, his father's name, his home and where it was. The man said his name was Jamrah bin Shihaab (Arabic: Cinder, son of Comet), that his home was called That Ladha (ablaze) and that it was located in Hurqah (burning). Umar's response was: "Go home at once, for it is on fire!" And indeed it was so.[5] There are in fact more instances in support of this observation than is fit to list here, which is a very curious and interesting phenomenon, that of the correspondence or associations of names and the name-holders. People have been obsessed from the oldest times with the cawing of crows, associating it with estrangement and separation, associating it to bad omen, fleeing from it and inducing others to flee from it; in a way it was fit that Allah should send this particular bird to the murdering son of Adam; it is a reminder of the augury that every human being will have fastened to his neck on the Day of Judgement. It should not be assumed that the sending of the crow was just a coincidence without any good reason. If the wisdom of such deeds slips one's mind, he should not assume that it is non-existent. It should be realized that the imperceptibility of the wisdom is just a proof of its subtlety and refinement. The Almighty Allah has so many aspects of noble wisdom, often glaringly conspicuous, that humans fail to perceive.

The mercy of animals

Regard first the quadrupeds. See how their young follow the mothers walking, not being in need of carrying about and not needing constant care as in the case of human babies. Since the mothers of lower species do not possess what the human mothers possess, the skills of care, soothing, and showing kindness, and the natural and manufactured devices, the Gentle and Knowing provided the animal offspring with independence and self-reliance soon after birth. You see how the babies of many birds, like poultry, pheasants, and soft-feathered eagles, walk and pick up food as soon as they come out of the egg. As for those that come out weak, the Lord, in His Providence, gave their mothers more affection, compassion and care, so that they masticate food and then bring it out from their draw and insert it in the mouths of the babies. It is stored in the safest place and then brought out through their mouths into the mouths of the fledglings. They go on doing that until the fledgling grows enough to rely on itself. All this is fortunate for these animals, although the collective mercy of all animals is part of the one hundredth share of mercy that the Lord allotted to living beings in this world [6] Once it gains independence and develops the ability to fly, its parents continue to train it to improve its ability most carefully, and they do that most kindly and willingly, until it is able to leave its nest, and get its food, and eat from where they eat. At this point they send it off from the nest as if they never knew it, and it never knew them; they no longer allow it to share their habitation or their food, but rather let it know in a language that it can comprehend: "Find yourself perch and food, for there is no longer a perch or food for you here."[7]

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[4] Reported by Al-Bukharee (10/574)

[5] Reported by Malik in his Muatta'.

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[6] The author is referring to this tradition:

«إِنَّ للهِ مِائَةَ رَحْمَةٍ أَنْزَلَ مِنْهَا رَحْمَةً وَاحِدَةً بَيْنَ الْجِنِّ وَالإِنْسِ والْبَهَائِمِ، فَبِهَا يَتَعَاطَفُونَ، وَبِهَا يَتَرَاحَمُونَ، وَبِهَا تَعْطِفُ الْوَحْشُ عَلَى وَلَدِهَا، وَأَخَّرَ اللهُ تِسْعًا وَتِسْعِينَ رَحْمَةً، يَرْحَمُ بِهَا عِبَادَهُ يَوْمَ الْقِيَامَةِ».

"Allah has divided mercy into one hundred parts, one part of which he allotted to the Jinn, humans, animals and beasts. It is by this that they have affection among each other; it is by this that a mother animal has mercy for its baby. The other ninety-nine parts of mercy Allah has reserved to have mercy on His servants on the Day of Judgement." Reported by Muslim (6840).

So ask the denier about this: Is it all haphazard? Who inspired them to behave like this? Who made them have all that affection for the baby-birds when they were quite young and in vital need of the parents' care; and then withdrew that sentiment exactly when the fledglings were able to do without their mother's care, and the mothers badly needed relaxation from that exertion and to be able to look after their interests? If the mothers had to continue giving the same care to the fledglings, that would cause them harm, would distract them from striving to take care of their own life, considering the great deal of food their young need; the Lord inspired them with affection, compassion and selflessness out of mercy for the fledglings, and withdrew that later out of mercy for the mothers. Can all this be without the disposition and care of a Wise Disposer? Can it be without the compassion of the Almighty Lord? There is ample evidence of His Lordship, proofs of His Divinity, indicators of His Wisdom, and signs of His Power, in a way that no mind can rationally deny. It is only an outward denial when any stubborn miscreant denies. It is well expressed in the Qur'an:

﴿أَفِي ٱللَّهِ شَكٌّ فَاطِرِ ٱلسَّمَٰوَٰتِ وَٱلۡأَرۡضِ. . . ﴾ [إبراهيم : ١٠]

"Can there be doubt concerning Allah?" (14: 10)

Doubt is legitimate in matters whose proofs are vague and the evidence is debatable; but in the case of the One Lord there is a proof, even proofs, in every concrete or abstract thing, that confirm and assert that He is Allah, and there is no true god but Him. So how can there be doubt concerning that?

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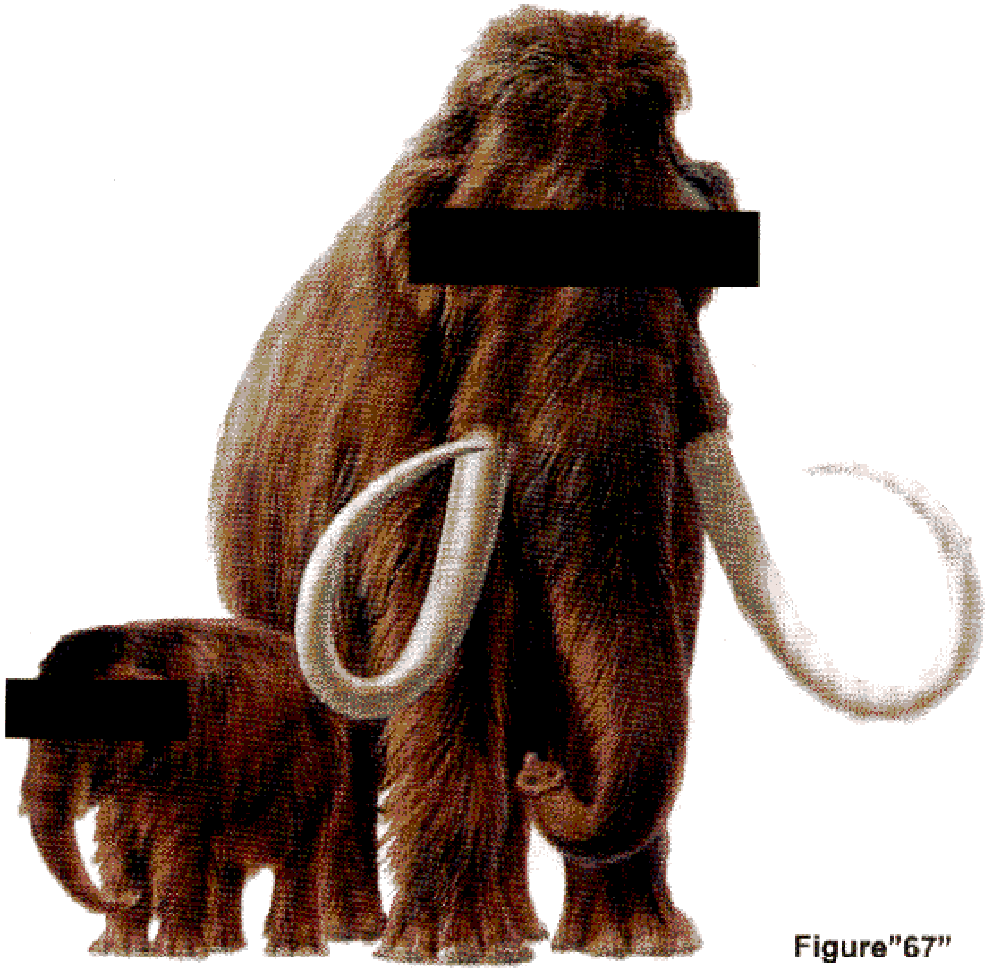
[7] The penguin's parental sentiment is also prominent in the behaviour of one of its sub-species called 'the emperor', in such a degree that penguins that have no babies fight among themselves to adopt a baby.
There is also a kind of geese that, when they cannot find food for their babies, they pore their own entrails with their beak, to cut from them food for their babies to secure their survival, sacrificing their own life.

The elephant[7]

Regard now the trunk of the elephant and the amazing aspects of wisdom it embodies. It does for the elephant the work of a hand by collecting fodder and water and delivering them inside. Without that,



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Figure"67"

Ancient, extinct type of elephant

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[7] If two elephants meet at a certain place to eat, they do not fight, but on the contrary they greet each other by each lifting its trunk high. After they have finished eating, each raises one of its front legs, and bows to the other. (Quoted from: 'Instinct or Divine Will?')

it wouldn't have been able to obtain anything at all from the ground: it does not have a long neck to reach the ground like many other animals, and so the trunk performs for it the job of the neck, an efficient replacement of it. The Lord enabled the elephant to lower it, raise it, fold it, and do with it whatever it likes. He made it to be a hollow vessel, smooth to touch; it catches with it what it needs, delivers with it what it wants to its mouth, holds inside it what it likes, and can cause harm with it to anyone if it wants; it gives with it, and collects what is offered to it. So ask the denier: Who endowed the elephant with this compensation? Who replaced for the organ it missed with something that can do its job? Who but the Compassionate? Who but the Merciful to His creatures; Who takes care of their needs, who is Kind to them? How can this happen if it were a universe without a Power to take care of it, a universe without its Tender, its Originator, Creator and Maker? There is indeed no true god but the Most Mighty the Wise.

To the question: Why did not the Lord provide the elephant with a neck like the rest of animals? What is wise about that? The answer is – though it is Allah who knows the wisdom of His handicrafts – because its head and ears are of such huge mass and heavy weight, that if it had a neck like most animals, it would soon be exhausted with the weight it carried and would not endure it. So the Lord had the head attached directly to the body, so that it does not suffer and struggle with the weight it bears; He created for it, in place of the neck, that long trunk with which it can pick its food. In contrast, as a camel's neck is long, for good reasons, its head was made small relative to its bulk, so that it does not exhaust it and tire it. So glory be to the Him, whose acts of wisdom are beyond the calculation of reckoners and the comprehension of thinkers.

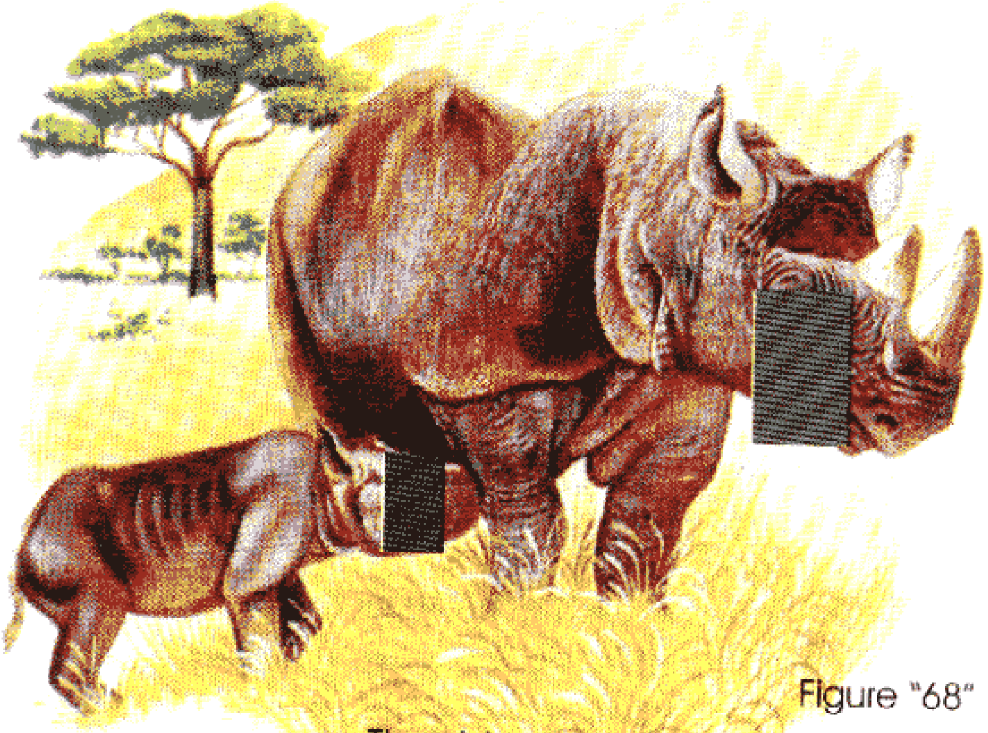

Figure "68"

The rhinoceros

The diversity of creatures points to the wisdom of the Maker

Our sheikh Abul-Abbas Ibn Taymiyyah, may Allah bless his soul, was once asked about a donkey that mated with a mare and impregnated it, would the mare's milk be legally permitted or prohibited to drink? [8] His answer was that it was permitted, since the male's part is not recognized in this case, unlike the verdict in the case of humans: the mare's milk is the result of fodder, so that it is formed from the mare's flesh, and the male donkey's mating had no part in the formation of the milk; there is nothing forbidden that applies to the milk. In the case of humans, on the other hand, the male's part is recognized in the milk, as breast feeding is a reason for the banning of certain marriages. In the present issue, no prohibition is transferred through the male except to the baby itself, since both parents are responsible for its formation, and so a baby donkey is equal to the parent in being prohibited to eat. The milk is not the consequence of the male's mating, but results rather from fodder, and so it is not prohibited. That is the purport of the sheikh's argument.

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[8] The question is justified, since the horse's meat is permitted to eat, as supported by authentic traditions of the Prophet, while the meat of domesticated donkeys is prohibited to eat.

Our purpose here is to refute the claim put forth by many that the giraffe is the outcome of the mating of many animals which meet at the places of drinking – such claims are a lie about the giraffe and a lie about creation. To refute this lie, one only needs to observe that when the male donkey and the mare mate, or the wolf and the she-hyena, or the sheep and the she-goat, there will not be in the offspring an organ from the father and another from the mother; not like the giraffe's having an organ similar to a horse's and another similar to a camel's; it is rather a mixture and compromise of the two, as you see in the mule: its head, ears, back, and hoofs are midway between the organs of its father and mother and a joint outcome of both. Even its braying is a mixture of the horse's neighing and the donkey's braying. This proves that a giraffe is not the descendant of parents of different species, as is assumed by some. It is rather an exquisite creation and a wonderful making, a creation of Allah, Who originated it, as a sign and an evidence of His power and wisdom which is without limit; so that His slaves should witness that He is the creator of various animals, Who diversified them as He wished and made them in the shapes He willed. Some are symmetrical, with balanced organs, some are asymmetrical, with different shapes, structures and looks. Similarly, he shows His servants His perfect power by creating the human species in four different ways, which point to their being created by the Lord's power and will and their being subordinate to Him. The four divisions are as follows: the human who was created without male or female, the father of the human species; the one created from a male without a female, the mother of humans who was created from a rib of Adam's; the one who was created from a female without a male, Jesus son of Mary; the one who was created from a male and a female, all the rest of human beings. He is thus showing His servants His signs and revealing Himself to them with His favours and power, that if He wills something to be He will say: Be, and it will be. Why the giraffe has that long neck is, according to those who observe its life and living place, because its home and grazing place is among tall, extremely tall trees; by having a long neck, the giraffe can reach the ends of branches of those trees to eat of their leaves and fruits. This is the extent of what those people know, although the wisdom of the Gentle, the Knowing is far deeper and superior to that.

The animal and tricks

It is an amazing instance of the smartness of animals that if the fox fails to obtain food, if it does not succeed in catching a prey, it fakes death and bloats its belly, so that a bird thinks it is dead and alights on its body to eat of its meat. Then the fox suddenly pounces on the bird and catches it. Another remarkable trick is that the giant fly called 'the lion-fly' when it sees that a fly has alighted nearby it, it stays motionless for some time, as if dead, until it thinks that the fly is content and no longer pays attention to it; it creeps softly, until it is close enough to have the fly within reach, and then it jumps on the fly and catches it.

One amazing trick of the spider[9] is the queer net it spins as a trap for hunting, inside which it lurks, until some gnat or fly falls in it; then it bounces at it and sucks its blood. In this we have the origin of catching by snares and nets; at the same time, the practice prior to the last is the origin of catching with dogs and leopards. One should not underestimate the lesson drawn from the bug and the mosquito, as the most precious lesson can be adopted from the humblest facts. To despise such lesson is the practice of those whose minds were outraged by Allah's setting for example the fly, the spider, the dog, and the donkey, about whom the following verse of the Qur'an was revealed:

﴿ ۞ إِنَّ ٱللَّهَ لَا يَسۡتَحۡيِۦٓ أَن يَضۡرِبَ مَثَلٗا مَّا بَعُوضَةٗ فَمَا فَوۡقَهَاۚ . . . ﴾

[البقرة: ٢٦]

"Lo! Allah disdains not to coin the similitude even of a gnat." (2: 26)

Many rich morals can be drawn from the life of those animals which you despise and underestimate! Many a sign in them exists about the Creator's kindness, mercy and wisdom. One may well ask the denier: Who inspired them with those tricks and subtle ways of catching their preys, which is their sustenance? Who provided them with those tricks as a compensation for their lack of strength and ability. Who but the Gentle, the Knowing compensated them with cunning for their lack of strength and ability?

---

[9] There is a subspecies of spiders that bores for itself a vertical hole, and makes for it a door from its saliva, that it mixes with mud, so that the door is several layers, alternating silk and mud; then it digs a secret entrance to this hole, covering it with another door. If attacked, it enters the hole through the secret entrance, and closes the door behind it, so that the enemy finds nothing when it searches. So glory be to Him who taught the animal! There is also a subspecies of crab, called 'spider of the sea', which has its peculiar way of camouflage. As it moves along, it picks up things that happen to be on its way, and carries them on its back to camouflage itself. If placed in an aquarium with pieces of sponge, it uses a piece of the sponge to cover itself. If transferred to another aquarium with green herbs, it throws off the sponge, and replaces it with herbs. If it is transferred to a third aquarium with red herbs, it again throws off the green herbs and replaces them with red ones. In all these tricks, it seeks to take on the colour of its environment.

How birds fly

Regard now the shape of a bird's body. Since it was destined to fly in the air, its body was made light and streamlined; it was provided with two legs not four, its fingers were made four not five, and its outlets for urination and excretion were united into one for both. Its chest was made narrow to enable it to penetrate the air wherever it turned, in the same way that a ship's bow is narrow[11], to split the water easily and slide through it. Some of the feathers of a bird's wings and tail were made long and strong in order for it to rely on them for taking off; and its whole body was covered with feathers, so that the air should penetrate through them and lift it. As its food was destined to be meat and grains that it swallows whole without chewing, it was not provided with teeth, while it was provided with a solid beak that helps it pick its food, without cracking from picking grains, or breaking from munching meat. As it does not have teeth, and swallows the grains whole and the meat raw, it was provided with extra heat in the belly to grind grains and process the meat. Because of this heat, it can do without chewing. To compare the high temperature that the bird has been provided with, you need just observe the seeds of raisins and such things as they come out of the human body whole, while they are disintegrated in the bird's belly in a way that they completely lose their texture. Another aspect of wisdom is that the bird, rather than delivering a baby, it lays eggs, so that it can fly. If it were to conceive a baby, and it would remain inside its belly until the end of its term, the female bird would be big with the extra weight of pregnancy and prevented from flying. Regard, too, how great is the mercy of inspiring the bird, which is usually a roaming flying creature, with patience after laying the egg, opting to sit still on the egg [11] until it incubates, enduring the difficulty of detention. After the chicks have come out, it bears the hardship of picking for them, and then gathering the grains in its craw, later to insert them in the mouths of its chicks – although it does not have reflection and foresight of the future, like a human, to expect from its offspring assistance, loyalty and gratitude. This well illustrates that the bird is made to have this compassion for the chicks for a purpose that it itself does not realize, nor does it reflect on the continuation of the species.

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[11] And so is the nose of a plane and a rocket.

The egg

Think about the egg, its thick yellow yolk, and its thin white; the former being the matter from which the chick develops, and the latter for its nutrition until it comes out of the egg. Reflect on the implication of this: as the chick is to grow in that enveloped shell where nothing can reach it from outside, it is provided with nutrients that will last it until it comes out.

> Allah has created a bird's wing as a miracle that bewilders thinking minds, combining lightness, strength and flexibility.
>
> Tell me, then, Has man ever built a plane that accomplishes this level of engineering sophistication?

---

[11] A hen sits on the egg for 21 days. Not only that, but it turns the egg every day for the fetus to mature, so that the egg would not crack before that, and so that the vessels of the chick at the bottom should not puncture, if they remain at the bottom of the egg.

Man learned to apply this method only from imitating the hen; he learned to turn the egg over, to produce chicks in his man-made incubators. So glory be to Him, who taught the animal, so that it taught man!

The diversity of the feathers of the wing is designed to fit the different functions feathers must fulfill. Some feathers, the side ones, are designed to help a bird rise to a higher altitude; some are designed to cope with sudden maneuvers; and so forth. A bird might dispose of some of its feathers while flying to maintain balance; it may spread some to counter the turbulence of air currents.

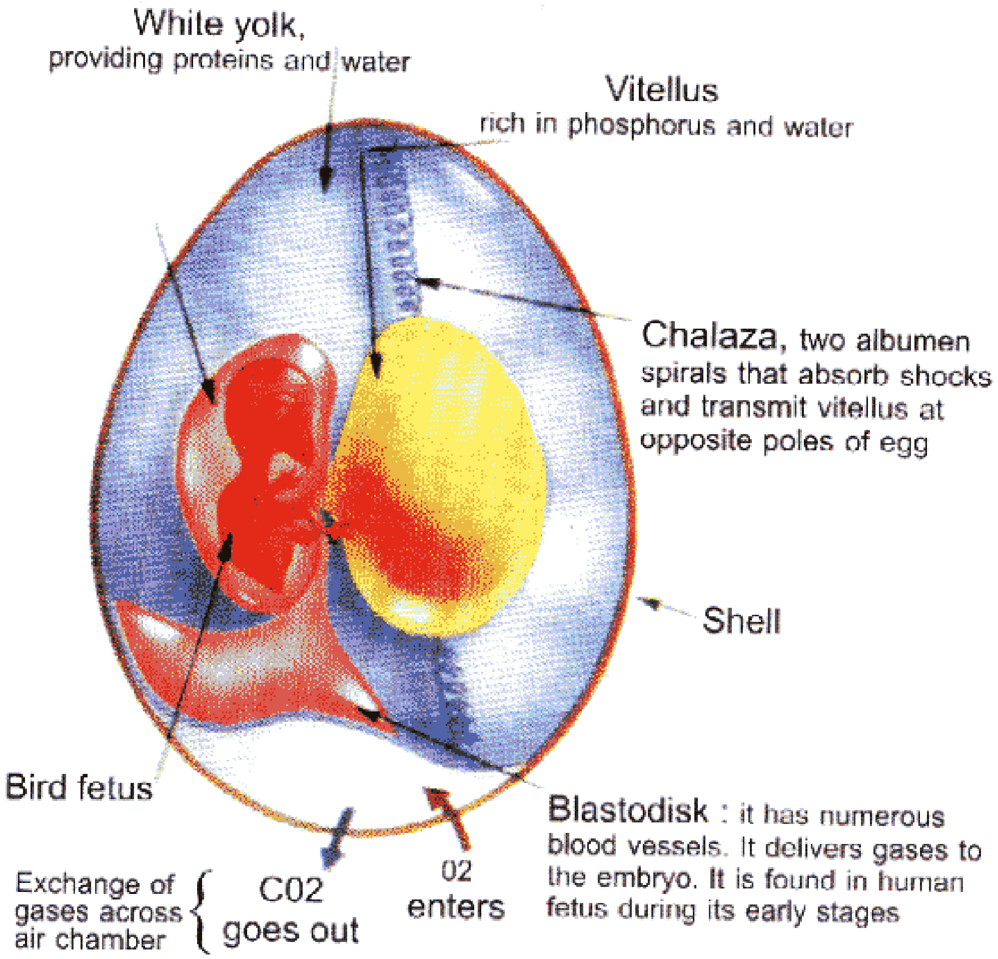
White yolk,
providing proteins and water
Vitellus
rich in phosphorus and water
Chalaza, two albumen spirals that absorb shocks and transmit vitellus at opposite poles of egg
Shell
Bird fetus
Blastodisk : it has numerous blood vessels. It delivers gases to the embryo. It is found in human fetus during its early stages
Exchange of gases across air chamber
C02 goes out
02 enters

Figure “69”

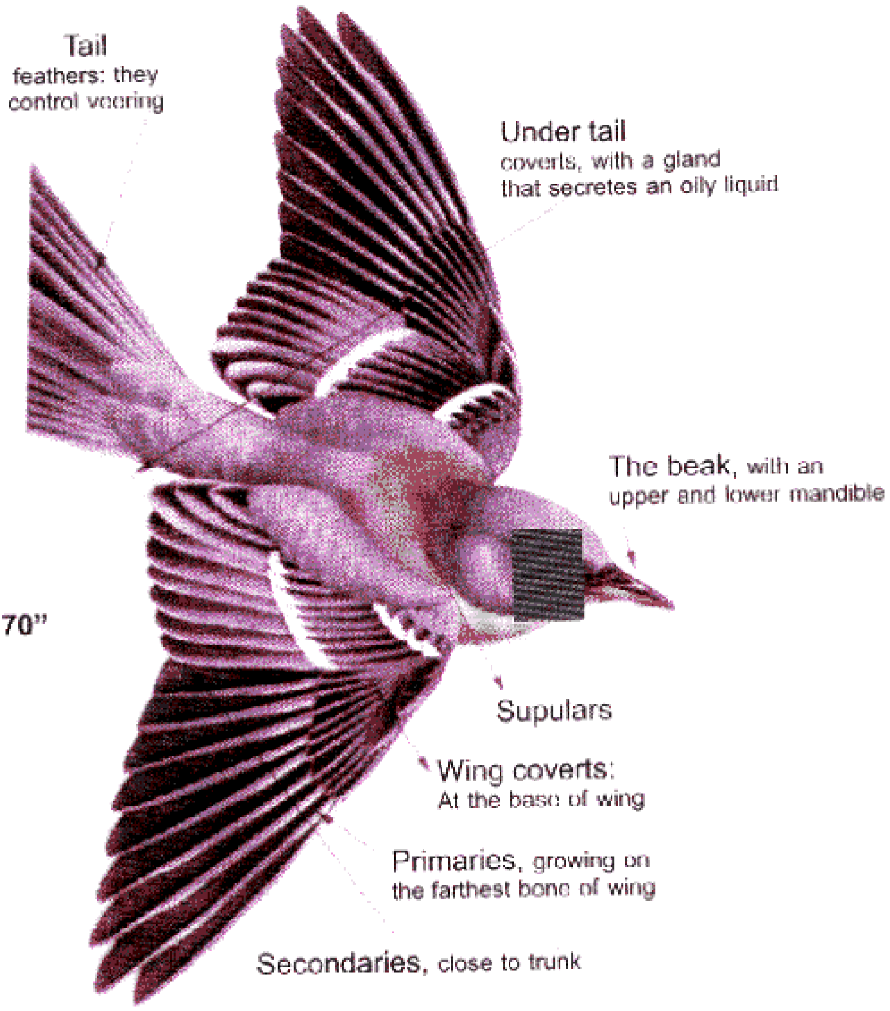
Tail
feathers: they
control veering
Under tail
coverts, with a gland
that secretes an oily liquid
The beak, with an
upper and lower mandible
Supulars
Wing coverts:
At the base of wing
Primaries, growing on
the farthest bone of wing
Secondaries, close to trunk

Figure "70"

The giraffe [12]

Consider now the case of the giraffe, its different organs, and their resemblance to various animals: its head resembles a horse's, its neck a camel's, its hooves a cow's, its skin a tiger's; this has led some to the claim that it is a hybrid resulting from impregnation of a female animal by several males of different species. They say that various land species come to drink at the same place, and that the wild male animals mate with domesticated ones and the outcome is this mongrel, which is like a human crossbred that is the hybrid of different humans. In my view, a person who makes such a claim is lying about the giraffe and lying about the creation. Animals do not impregnate females of different species: the camel does not fertilize the cow, nor the cow the she-camel, nor the horse the cow or the camel, nor vice versa, nor do other beasts or birds do that. It is true that some similar species do mate with their closely related species: the wild cow and the domesticated cow; the sheep and the goat; the horse and the donkey; the wolf and the hyena, when the mule, the mongrel sheep-goat or wolf-hyena result.

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[12] When the giraffe is surprised with a possible danger from some fierce animal it resorts to a wood of thorny bushes that does not harm it, because of its long legs, while it ensures its escape.

Some jurists' discussion of what 'zakat' (poor due) should be levied on the hybrid from a wild and a domesticated animal is pointless in most cases. In the cases when it happens, there will be certain regulations about the resultant animals connected with zakat, the retribution for hunting, and sacrifices. In every one of these regulations precaution should prevail: in the case of sacrifices, a mongrel does not fulfill the requirement; in the case of the person in a state of ihram, and in the area of the haram (Makkah), retribution should be imposed; in the case of animal foods, prohibition should prevail; as for zakat, there is a well-known debate.

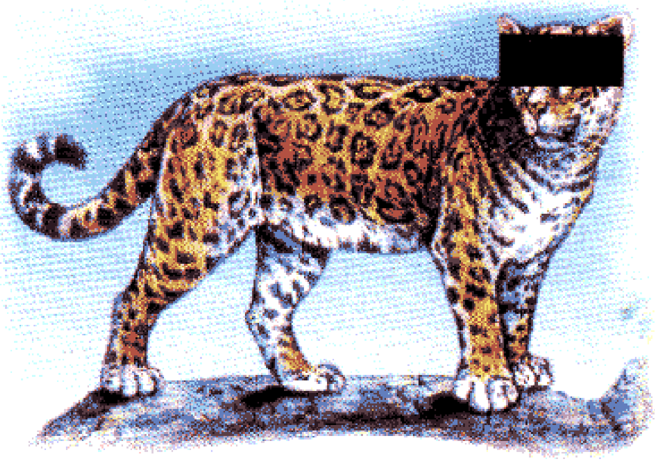

Figure "71"

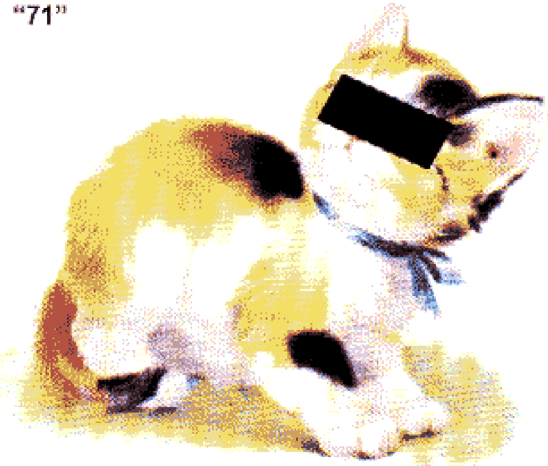

Figure "72"

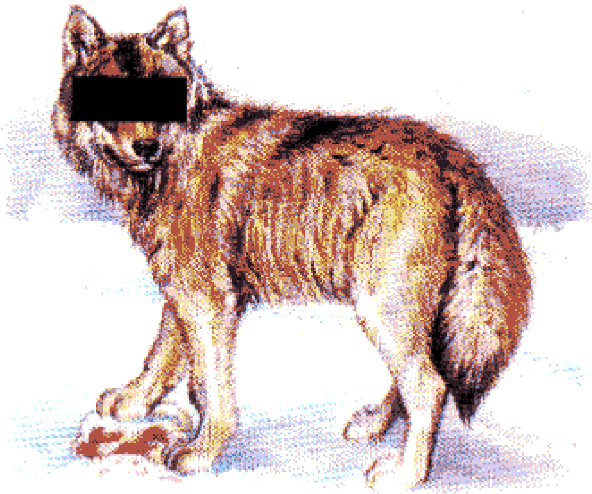

Figure "73"

Allah has endowed animals with sharp teeth and claws to defend themselves and to attack their prey

Bird's craws

Regard also the wisdom embodied in the craw of the bird and the functions it performs. The passage to the stomach is quite narrow, and only a little food can reach it. If the bird could not pick a grain until the previous one had reached the stomach that would take an unduly long time. When would the bird in this case finish its meal especially as it out of caution only snatches its pickings. The craw is provided so that it can use it as a pannier in which it temporarily stores the food it has picked in haste, and then it can take its time to transfer the swallowed food to the stomach. The craw has also another function, as some species of birds need to feed their chicks chewed bits, and so they find the craw handy to regurgitate the food fast.

Birds' feathers[1] and the diversity of their colours

Reflect then on the widely different colours, hues and shades of many species of birds, like the peacock, the pheasant and others, which would beat the beauty and precision of any human art, no matter how carefully and finely painted. How can nature produce such exquisite art which no human art can match?

Observe the peacock's colour and its intricacy! You can see that it matches the weaving of very delicate fabric, woven from very thin threads, and spun together, in the way a thread is intertwined with thread, or hairs with hairs. Try to pull apart the fibres of a feather, and you find that they spread bit by bit, hardly admitting even the passage of air. They are designed to carry the bird in its flight, and you see in the middle of the fibres a strong stout column, overlaid with that mantle that resembles hair to give it firmness with lightness: this is the mid-rib in the middle of a feather; it is hollow, filled with air to allow the bird to float in the air. What nature could have that wisdom, knowledge and kindness? Even if it were nature that accomplished these wonders, as they say, that would be a compelling proof and convincing witness of the Power, Knowledge and Wisdom of its Maker and Originator. The proof the denier uses to deny the Lord is in fact a strong proof and sign that increases the believer in faith. The truth is that by the same signs of Allah, He misleads whomsoever He wants and guides whomsoever He wants.

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[1] The Almighty in His Power created the duck with feathers that do not get wet. This is made possible by the fat glands surrounding the roots of feathers, which lubricate the duck's feathers. You often notice the duck on the bank tidying its feathers with its beak, when it is in fact reaching with its beak for some of the fat glands near the tail to use the fat for rubbing parts of the feathers on its body.

Some birds' long legs

Observe this bird with long legs,[2] and try to discover the benefit of the length of its legs. It seeks food in shallow water, and it stands on its legs like a forecastle upon a boat, peering on the creatures that move in the water; when it sees something that suits its need, it moves softly until it catches it. If it were short-legged and moved in the water towards the prey, its belly would touch the water and disturb it, which would scare the prey and drive it away. The two columns it was provided with help it achieve its purpose, and not ruin its attempt. In every bird balance is maintained between the length of legs and the length of neck to help it pick up its food from the ground. It may be helped in addition to its long neck with the length of its beak which makes it even easier and more handy to obtain its quest.

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[2] The stork with its long legs flies in the winter for about 6 thousand kilometres from Germany, Holland and Austria to the middle and south of Africa seeking locusts, its food of choice. (So who guided it to travel those vast distances to do that?)

Seeking a living

Look at birds seeking their food throughout the day; they neither fail to find it, nor find it gathered and ready. They rather find it by searching and seeking in different directions and places. So, glory be to Him who created the food and put it within reach! See how He did not make food too hard for birds to obtain, while He willed at the same time that they need to strive to get it. See how He made it fairly available to them at all times and everywhere; they find it even in walls, in ceilings and on roofs. They pick it at leisure, not challenged in their pursuit by other species of birds. If all the food they needed were gathered in one place, all ready to be picked, they would all converge on it voraciously and greedily, not giving up even after they had their fill, until they were satiated and killed themselves with overeating.[3] This is so with humans too. If their food were made obtainable without the least effort or toil, that would be conducive to avarice and greed; mischief would spread, vice and extravagant behaviour would abound. So glory be to the Gentle, the Knower, Who did not create anything in vain or without good reason!

The multiplicity of insects

Observe those nocturnal flying creatures, the owl, the bat and similar other animals. Their food is found in the air; it is not grain or meat, but mosquitoes, moths and such flying creatures. They snatch of those what they need and then seek shelter at their habitation, not coming out except by night; because those mosquitoes, moths and the like are spread everywhere, and there is hardly a place devoid of them. To confirm this, put a lantern by night on a roof or a yard, and you see swarms of such insects flocking to it. Creatures likes bugs and moths are low of wit, not much capable of fending for themselves, the least gifted in this respect of all flying creatures and the most foolish – you have a manifest evidence of this in their flinging themselves in the fire even if you try to scare them away until they get burned to death. So the Lord made these creatures food for those birds, which come out by night in search of those insects, and feed themselves on them. During the day, they confine themselves to their habitation. For them, night is like the day for other birds, and their day is like the others' night. Even so, He Who undertook to give all creatures their living sends them what they need in the air, not neglecting to feed them despite their weakness and unresourcefulness. This reveals one benefit and function in creating moths, grasshoppers [4] and mosquitoes. Many groups of species that glorify the Lord find their living in those creatures! Otherwise they would have multiplied and proliferated until they would have caused mischief to humans and deprived them of their peace. Regard then the remarkable craftsmanship and management of Allah; they oblige the minds to testify to His Lordship, Power, Knowledge and Wisdom; what is revealed to men's eyes is not the result of coincidence or blind chance, as is confirmed by every kind of proof that no innate nature can deny at all.

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[3] Migrating birds travel seeking food over continents and go on flying for weeks; man just wonders where and how they sleep. To unravel the mystery, some scientists fixed tiny devices on some of these birds. They found that the birds take turns in sleeping, while staying with the flock that goes on in its journey that takes ten days.

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[4] A grasshopper is a species of insects that skips in the fields. It can change its colour, adopting the colour of the exact spot where it happens to be.

* Another species of insects, the female hornet, anticipated man in manufacturing paper. It gathers wood fibers and some plant constituents with its strong jaws, then it brings them out and mixes them with a liquid that it secretes, then it leaves them to dry. Once they have dried, they become a thin layer, similar to the brownish paper that shopkeepers use for wrapping. From that paper the female hornet builds its habitation. We do not know whether the Japanese who build their houses from paper adopted this idea from that species or not!

The bat

Having mentioned the bat, we should note that it is a unique and remarkable species that the Lord created, having common features with birds, and common features with quadrupeds, though it has more in common with the latter; it has two sticking-out ears, teeth and an anus. It delivers babies, breast feeds, walks on four legs, having all the characteristics of the quadrupeds. On the other hand, it flies with wings like birds. Since its vision is too week to encounter sunshine, its day is like other creatures' night. After sunset it sets out. Hence a weak-sighted person is compared in Arabic to a bat, and the word 'khafash' in Arabic means weakness of vision. Having to seek its living by night, it is similar in this to weak birds which do not fly except by night. Some of those who describe the lives of animals have claimed that the bat eats nothing, and that its only source of nutrition is cool breeze. This is a falsehood about this species and about nature, since this animal urinates. In fact, jurists have discussed whether its urine is lawfully clean or not. The point of the discussion is: is it the urine of a non-edible animal, and therefore unclean, or is it unclean but little droplets of it are pardonable in view of the difficulty of avoiding them? Both verdicts have legitimacy, and both have been attributed to Imam Ahmad. There is a third view, that no quantity of it, small or big, is unclean, and this is the most correct view, since there is no text (from the Prophet) concerning it, so it may not be likened to unclean urines, in the absence of a strong common quality and in view of the evident difference. This is, however, not the place to pursue the arguments of the different parties. What concerns us here is that if the bat ate nothing, there would be no point in its having teeth, since teeth are of no use for a creature that eats nothing. The infant, for instance, is not provided with teeth as long as it does not eat. When it grows and needs to eat, it is equipped to do that with incisors that cut food and grinders that grind it. There is nothing in creation that is done haphazardly, or is devoid of wisdom, or without reason. As for the benefits and uses of the bat, physicians have enumerated such of these that they were able to detect. Even its urine is used as an ingredient in certain eye powders. And so, if the urine, that is furthest from being of use, is useful, one may use his imagination to think of the rest of its benefits and uses.

The Maker's Guidance

A person whose truthfulness is well known to me tells me that he saw that an Egyptian vulture, which is a well-known bird, had built its nest in a tree. Once it saw a huge snake approaching toward its nest gaping with the intent of swallowing its eggs. It looked frantically for a way to save its nest, and saw a bone in the nest; so it carried it and shoved it in the snake's mouth. The latter started to twist in pain until it perished.

The ants [5]

Regard now the ant, this fragile creature, and the amount of shrewdness or planning it was provided with in the matter of collecting food, storing it and preserving it from contamination. By observing it, you can learn many lessons and signs. You can see how when the ant tribe seeks food, they leave their holes in search of it. Once they have come upon it, they go in files from their holes to it, and start to transfer it. You see them in two files, one loaded with food and heading home, and the other going from home, not mixing with the other file, the two files constantly distinct and separate. They resemble two groups of people, one going to a place and the other returning from it. If the load is too heavy, a group of ants take part in carrying it, in the same way that a group of men take part in carrying a stone or a trunk of wood. If it is a single ant that has found the heavy thing, its companions assist it in carrying it to its habitation, and then leave it to its owner. On the other hand, if a group have come upon something together, they work together to transfer it, then share it at home.

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[5] The ants have some habits in common with man. They build cities and roads, dig tunnels, store food, and plant gardens and crops. They have armies ready for war and defence. They take prisoners-of-war, they have trials, and so forth.

There is a subspecies of ants called the 'milkers', which subdues kinds of worms and maggots and raises them in special places and farms, feeding them and taking care of them; it extracts from them a sweet stuff called the 'honey dew'.

An experienced person told the following remarkable account:

I once saw an ant that found a half locust; she tried to move it, but she failed to carry it from the ground. So she moved a little distance and called a group of ants. The narrator adds: I took away that half locust from the ground, so that when the ant and its companions came she went around and they went around, but could not find it, so they went back. Then I replaced the half locust, and when the ant came, she saw it, she tried to carry it but failed. So she walked a little distance, bringing her group. They came and went round the place, and when the group did not find anything, they made a circle round the ant, attacked it and cut it limb from limb. I sat there observing all this.

An amazing aspect of the shrewdness of ants is that when they transfer a grain to their habitation they break it into pieces so that it does not sprout. If it is a two-lobe grain, each lobe capable of sprouting, they break it into four pieces. If it is damped with dew, and they worry that it might rot, they bring it out into the sun, and later bring it back into their habitation. That is the reason you often see outside their habitation a lot of broken grains, then if you come a short time later you find nothing left at all. Another token of their wit is that they do not dig their habitation except on an elevated piece of land, lest the flood should drown it. You never see the ants' village in the bottom of a valley, but raised to a part where the flood does not flow. It is enough to illustrate the ants' shrewdness to cite what the Almighty related in His Book concerning the group of ants when one of them addressed its companions at the approach of Sulaiman (Solomon), peace be on him, and his troops. These are the words of the ant as reported in the Qur'an:

﴿ يَٰٓأَيُّهَا ٱلنَّمۡلُ ٱدۡخُلُواْ مَسَٰكِنَكُمۡ لَا يَحۡطِمَنَّكُمۡ سُلَيۡمَٰنُ وَجُنُودُهُۥ وَهُمۡ لَا يَشۡعُرُونَ ﴾

[النمل : ١٨]

"O ants! Enter your dwellings lest Solomon and his armies crush you unperceiving." (27: 18)

In this exhortation, it has used ten styles of speech: calling, alarming, naming, commanding, attributing, warning, specifying, expounding, generalizing, and apologizing. Despite its brevity, its exhortation employs all these ten styles. That is why Sulaiman admired its statement, smiled delightedly at hearing it, then asked Allah to inspire him with thanking His favour at hearing its words. Such shrewdness is not to be wondered at in a species that glorifies the Lord in gratitude. It is as described in an authentic tradition of the Prophet ﷺ:

«نَزَلَ نَبِيٌّ مِنَ الأَنْبِيَاءِ تَحْتَ شَجَرَةٍ فَلَدَغَتْهُ نَمْلَةٌ فَأَمَرَ بِجِهَازِهِ فَأُخْرِجَ، ثُمَّ أَحْرَقَ قَرْيَةَ النَّمْلِ، فَأَوْحَى اللهُ إِلَيْهِ: مِنْ أَجْلِ أَنْ لَدَغَتْكَ نَمْلَةٌ أَحْرَقْتَ أُمَّةً مِنَ الأَمَمِ تُسَبِّحُ، فَهَلَّا نَمْلَةً وَاحِدَةً».

"A prophet was resting under a tree when an ant stung him, so he ordered that his belongings should be removed from there, and that the ants' village should be burned. Then Allah revealed to him: You burn a whole group of a species that glorify the Lord. Why not a single ant?"

Bees

Turn your attention now to the lives of bees, and the lessons and signs they involve! Think of them in their painstaking effort to produce honey and build their hexagonal dwelling, one of the most well-shaped figures and the most rounded and carefully crafted! As they join one to another they leave no gaps or looseness between them, and all this is achieved without devices or compasses or measurements. It is all by the inspiration of Allah and His guidance and teaching, as is explained in the Qur'an:

﴿وَأَوۡحَىٰ رَبُّكَ إِلَى ٱلنَّحۡلِ أَنِ ٱتَّخِذِي مِنَ ٱلۡجِبَالِ بُيُوتٗا وَمِنَ ٱلشَّجَرِ وَمِمَّا يَعۡرِشُونَ ○ ثُمَّ كُلِي مِن كُلِّ
ٱلثَّمَرَٰتِ فَٱسۡلُكِي سُبُلَ رَبِّكِ ذُلُلٗاۚ يَخۡرُجُ مِنۢ بُطُونِهَا شَرَابٞ مُّخۡتَلِفٌ أَلۡوَٰنُهُۥ فِيهِ شِفَآءٞ لِّلنَّاسِۚ
إِنَّ فِي ذَٰلِكَ لَأٓيَةٗ لِّقَوۡمٖ يَتَفَكَّرُونَ﴾ [النحل : ٦٩]

"And your Lord inspired the bee, saying: Choose thou habitations in the hills and in the trees and in that which they thatch;

"Then eat of all fruits, and follow the ways of thy Lord, made smooth for thee. There comes forth from their bellies a drink diverse of hue, wherein is healing for mankind. Lo! herein is indeed a portent for people to reflect." (16: 68-69)

Observe their complete compliance and observance of the direction of their Lord: they build their habitation in those three places, in the hills and mountains, in the trees and in people's houses. You never see the bees building their habitation except in those three places. Observe how most of their habitations are in mountains and hills, in trees and in people's dwellings, never anywhere else; the place mentioned first in the verse is the place most frequently used, trees are next in frequency, and people's dwelling come last. These last are the smallest in size, while in mountains and trees their hives are enormous; and huge amounts of honey are collected from them. Regard how the bees, in their perfect compliance, first settle in a habitation, and only after they have settled they leave it, to suck and eat from the fruits, and then return to their habitation. This is in compliance with their Lord's directive to find a habitation first, and to feed themselves after that. And once they have eaten, they follow the way the Lord made smooth for them to suck and return.

An amazing fact about bees is that they have a queen, without whom they do not fly about, do not work, and do not suck. They obey her, give heed to her, and work upon her commands. The queen has the right of directing them, ordering them and forbidding them. They are her subjects, obedient to her, and abiding by her pleasure. She directs them in the way a king directs his subjects. As they enter their home, the queen stands at the door, not letting any bee shove another or precede it in passing in. They pass in one by one, without crowding, colliding or clustering; it organizes their entering in the same way as a leader does when his troops arrive at a narrow passage where there is no room for more than one at a time. While observing the bees' management of their affairs, good policy, guidance, unity of intent, organization, handling of their rule, and the assigning of each individual's work, one would have no end of wonder! It will be plain to the observer that it is not on their own that bees can accomplish those acts, or achieve control and management most perfectly. If you observe the worker bee, you will see that it is among the weakest of Allah's creatures, utterly ignorant about its own affairs, and the least capable of going about its interests, to say nothing about the amazing achievements it performs. One puzzling fact about bees is that they never have two queens at one habitation, commanding the same group. If two groups are formed commanded by two leaders, one of the two is killed and cut into pieces, and they agree on giving their loyalty to one queen, without showing hostility among themselves, or trying to cause injury to one another. They unite as one group having one army.

The production and benefits of honey

A bewildering thing about the bee, something that most people do not realize or notice, is the way the bee reproduces, whether it is by way of delivery or by transformation. Very few people imagine how it happens or get to know it! Indeed it reproduces by neither of the above two methods, but by the most mind-boggling method! As a bee goes to the meadows it picks nectar, the purest stuff on leaves, petals, flowers, grass, etc.; it sucks it, and this forms the essence of honey. Then it presses the condensed bits of that stuff on the face of a leaf, and sticks it on its leg, forming it in the shape of a lentil; then it fills with it the empty hexagons made of honey. Later on, the queen makes a round beginning with its habitation, breathes in it, and goes on to the other habitations and breathes in all of them. From this, life emerges in them by the will of Allah the Almighty, and so they come out as flying creatures by the will of Allah. This is a curious miracle and a sign that few get to know; it takes place by Divine inspiration, which guided the bees and taught them management, travelling, living, constructing and production.

You may well ask the denier: Who inspired the bee to do what it does and implanted that in it as a natural habit? Who made its way smooth so that it could obtain what it sought without obstruction or hardship and without losing its way despite the remoteness of its destination? Who guided it to perform what it was made for? Who created that nectar which, after being consumed, would turn into pure multi-coloured honey, perfectly sweet, tasty and beneficial? A variety of honey is so white that you see the reflection of your face in it better than you see it in the mirror, as described by a person who brought some of it to me: he described it as the choicest honey that is known to mankind, the purest and most delicious. Its taste was indeed the most deliciously sweet. Other varieties are red, green, pink, black, tan and many other hues in between, with flavours that vary with the variety of the sucking plants and the original substance of it.

It is worth your while to reflect on the benefits and healing properties that the honey confers. Honey is a constituent of most medicines, in such a degree that the ancients did not know sugar, nor is it even mentioned in their books. What they used with their medicines was honey, and that is what you see mentioned in their books. Indeed it is more beneficial than sugar, more effective and more purifying of humours, more ameliorating and alleviating and supplying with resistance to injury. It is more strengthening for the stomach, raising of spirits, lifting of the soul, enhancing the catalytic medicines and assisting in tracing ailments in the furthest reaches of the body. It is on this account that sugar was never mentioned in the traditions of the Prophet ﷺ nor was it even known to his contemporaries. If the world were without sugar, it would not be missed, while if honey were lacking, there would be a great demand for it. Some towns have so taken to using sugar that they have given up honey, and they prefer the taste of sugar to that of honey; they find the former less sharp and intense than the latter. They do not realize that the honey's benefit lies in its very sharpness and intensity. If somebody finds it not fit for his body, he is recommended to soften the honey's sharpness with other foods, and in this way it will be more beneficial than sugar. I shall devote a chapter to this issue, [1] Allah willing, in which I detail honey's superiority over sugar, supporting this in many undeniable ways, and listing many irrefutable proofs. Have you ever seen sugar clearing phlegm, melting a humour or healing from an illness? The utmost sugar can do is to ease the passage of medicine in vessels because of its mildness and sweetness.

Conditions for healing with honey

As for healing by the use of honey, Allah has denied some people benefiting from the healing power in it, in such a way that they speak ill of it, dreading its unfavourable effects, because of its heat and sharpness. We have no doubt about honey being a healer; or, for that matter, about the Qur'an being a healer, prayer being a healer, remembrance of Allah and supplication to him being a healer – all these do not benefit each and every one and each and every disposition. Take the case of the Book of Allah, the sublime healer, the greatest of healers; but how few are those who seek healing in it! It indeed gives people with poor dispositions nothing but worsening of their plight, and only increases the ruin of the evil-doers. In the same way, the remembrance of Allah, taking refuge in Him, coming close to Him, and taking refuge in prayer have healed so many suffering people, and eased the sickness of so many sick people, and have taken the place of so many medications, which never rival it in their curing power. Nevertheless, you see how many people, indeed the majority of people, do not have any hope of finding remedy in such means. I did see, though, in the medical books written by Muslims, under the lists of single remedies, mention of prayer in its alphabetical place, where the writers mention several physical ways in which prayer represents a remedy, and many psychological and spiritual benefits as well.

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[1] Not included in the present work.

I also heard our Sheikh Abu Al-Abbas Ibn Taymiyyah, may Allah bless him, recounting the conversation between him and a physician concerning an ailment that he had. The physician said: 'Nothing aggravates your case like scholarly discussions and thoughts, and the supplication and remembrance of Allah.' Ibn Taymiyyah retorted: 'Don't you claim that if the morale is raised and one has high spirits there will result an internal power that assists the physical power of resistance so that it overcomes the disease, since a disease is an adversary that the organism needs some internal power to defeat?' 'Yes, it is so,' said the physician. 'When my mind is concentrating on remembrance of Allah, supplication to Him, and scholarly discussions, and I accomplish some success in untangling some of the problems in that direction, I feel elated and have internal power, which assists in defeating the ailment.' This is the essence of his account.

What we are trying to say is that if many people ignore healing by honey, it does not make it less possessing of the property of curing, in the same way as most people's abandoning of the use of the Qur'an for healing from the heart's diseases does not make it less possessive of the property of healing them. It is a remedy for what besets hearts, even if most patients fail to benefit from this power. This may be supported by the following verse from the Qur'an:

﴿ يَٰٓأَيُّهَا ٱلنَّاسُ قَدۡ جَآءَتۡكُم مَّوۡعِظَةٞ مِّن رَّبِّكُمۡ وَشِفَآءٞ لِّمَا فِي ٱلصُّدُورِ وَهُدٗى وَرَحۡمَةٞ لِّلۡمُؤۡمِنِينَ ﴾ [يونس : ٥٧]

"O mankind! There has come to you an exhortation from your Lord, a healing for that which is in the breasts, a guidance and a mercy for believers." (10: 57)

We notice here that the Qur'an offers preaching and healing to people at large, while it confines guidance and knowledge to some. This means that it is a healer in itself, whether a human helps himself to this capacity of it or not. Nothing is described by Allah in His Book as being a healer except the Qur'an and honey; they are the healers, one a healer of hearts, healing them from misguidance and aberration, their doubts and caprices; and the other is a healer of bodies from many of their diseases, complications and ailments.

While I visited Makkah, I had many ailments. There was no physician there or medications as in other towns; so I sought healing from honey and the Zamzam water, and I discovered in them an amazing source of healing! Regard how the Almighty Lord describes the Qur'an as a healer in itself, while He said of honey

﴿ فِيهِ شِفَآءٞ لِّلنَّاسِۚ ﴾ [النحل : ٦٩]

"In it there is cure for people." (16: 69). What is a healer in itself is more effective than what has a healing power. This is not the place, however, for exhausting the benefits and uses of honey.[2]

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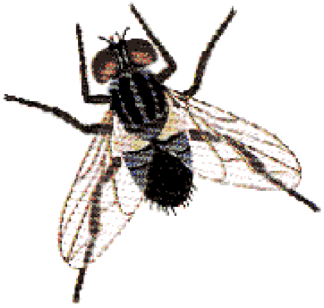
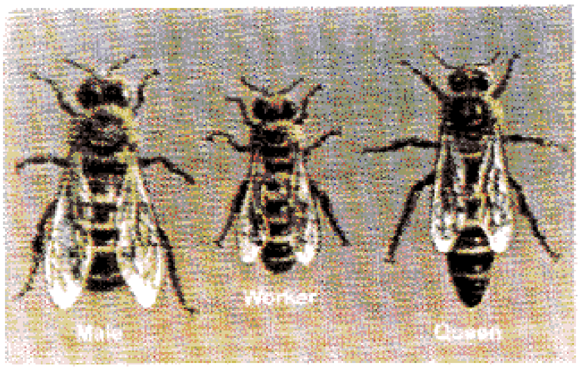
[2] See Volume Four of Ibn al-Qayyem's "Zad al-Ma'ad", chapter on the Prophet's ﷺ tradition of treatment with drinking honey, cupping and cautery.

Milk

Turn your attention, also, to the message embodied in the cattle, the milk that Allah has given us from their bellies, a pure delicious, wholesome, soft drink that emerges from between the refuse and blood. Regard how they swallow food through their mouth down to the stomach, where some, with the will of Allah, turns into blood, and then the blood runs through its vessels, organs, flesh and hair. As the vessels deliver it to the different parts, each organ, nerve, cartilage, hair, hoof and claw transforms it to its own composition! Then the blood stays in those stores that are reserved for it, since the animal cannot survive without it; and then the refuse of the blood is pushed out to the intestines where it is transformed to dung, while the rest turns to pure white milk, smooth for the drinkers, emerging from between entrails and blood. If the ewe or another animal is overmilked, the milk will be reddish in colour. The Almighty Allah filtered the softer part of the chime with the first processing, being blood when it was conducted to the liver; then it was mingled with the four humours. Next, the Exalted and Majestic Allah caused each of the four humours to pass toward its store and location, which is prepared for it: the gall bladder, the spleen and the kidney. The rest of pure blood runs along the liver's vessels, pouring from there to the breast, where Allah, the Almighty, transforms its bloody shape, composition, and flavour, to the milky shape, composition and flavour. This is how it is extracted from between entrails and blood. So ask the denier: Who managed things this way? Who designed them with this design? Who did things that carefully? Who showed so much kindness? Who but the Gentle, the Knower?



The hornet Figure "74"



The wondrous world of bees

Figure "75"

Figure "76"

The wondrous world of insects

The carpenter ant, seen in this picture belongs to a genus of insects that is widely spread in the world. Some of its species cause great ruin to wooden buildings.

The Fish [3]

Think now of the fish, and the message embodied in it, the way it was created! That it was created without legs, as it does not need to walk, since it lives in water. It was not provided with lungs, as lungs are for breathing, and the fish are immersed in water. In place of the legs, it was provided with sturdy fins, which it uses to row on its sides, in the same way as a boatman uses his oars to row on the sides of the boat. Its skin is covered with scales that are overlapping to protect it from injuries in the same way as a chest is protected in other organisms. It was endowed with the sense of smell to compensate for its weak vision, and the water blocking its sight. However, it smells food from a far distance and moves towards it. It is mentioned in some books on animals that a fish has a canal that connects its mouth to the outer ear canal, so it takes water in its mouth, and passes it out through that canal, which gives it relief, in the same way as a land animal inhales a cool breeze into its nose, then exhales it, to refresh itself. A sea animal is similar to a land animal. The sea and the land are in fact two oceans, distinguished from each other in the extra softness of one in comparison with the other. The ocean of the atmosphere is the place for the land animal to float, and the sea is the ocean for the sea animal to swim in. Each would die if transferred to the other ocean. A sea animal would suffocate with air in the same way as a land animal would suffocate in water. So glory be to Him whose wonders are beyond the calculation of all creation, nor can any creature encompass the marvels of even a single wonder. If we get to know some miracle, we still are ignorant of others!

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[3] There is a species of fish, called, the 'electric', which kills its prey with an electric charge. It even has control of the intensity of the electric charge, lights its way in the dark, and turns it off at will. Some red Indian tribes even used this kind of fish in treating certain varieties of rheumatism, employing the electric power of that fish.

Reflect, then, on the compelling wisdom embodied in the fish breeding more than all other animals! You see in the abdomen of a fish more eggs than one can count. The wisdom in that is to produce enough for the many animals that seek it for nutrition. Most animals eat fish, even wild animals; they prowl on the edges of jungles, in proximity of clean water, and if they fail to catch land game, they lie in ambush for the fish to snatch them. And so, since wild animals eat fish, birds and humans eat fish, big fish eat fish, land beasts eat fish; all by the will of the Lord Almighty are given fish as food; He willed in his judgement to provide fish in that abundance! If a human were to see what the sea contains of diverse animals, precious stones, and other things that none but the Lord can keep count of, and which humans know only a scanty number of, nothing compared with what they ignore, he would be overwhelmed with what he had seen, and would realize the expanse of Allah's kingdom, and the multiplicity of His troops, which none but Him can keep count of!

The locusts

Consider the locusts, some of the legions sent by Allah, fragile of physique, amazing of structure, a composite of the structure of seven species! You can see how their troops advance, irrepressible and countless. No king can stop them from invading his territories for all the cavalry, infantry, beasts or armour that he might mobilize! See how they swoop on the lands like a torrent, invading plains and hills, the suburbs and towns, in such swarms that they block the sun's rays and veil the surface of the sky with their wings. They soar to such height as cannot be reached by birds of bigger wings. So we ask the denier: Who sent those weak troops – which cannot resist an animal that assaults them – during a night to swoop against an army in all its power, equipment, numbers and plans, unable to stop their progress. Humans just watch passively as the locusts snatch their provisions and turn it to waste, leaving the land a bare stretch, while the owners are incapable of withstanding them or blocking their attack. This is an illustration of Allah's wisdom, letting the weak unarmed creatures overpower the strong, by which He takes revenge on the latter, and visits on him that which He had always warned them against, a revenge that they are incapable of withstanding or resisting.

The right of the oppressed

We read in the Qur'an:

﴿ وَنُرِيدُ أَن نَّمُنَّ عَلَى ٱلَّذِينَ ٱسْتُضْعِفُوا۟ فِى ٱلْأَرْضِ وَنَجْعَلَهُمْ أَيِمَّةً وَنَجْعَلَهُمُ
ٱلْوَٰرِثِينَ ○ وَنُمَكِّنَ لَهُمْ فِى ٱلْأَرْضِ وَنُرِىَ فِرْعَوْنَ وَهَٰمَٰنَ وَجُنُودَهُمَا مِنْهُم مَّا كَانُوا۟
يَحْذَرُونَ ﴾ [القصص: ٥، ٦]

"And we desired to show favour unto those who were oppressed in the earth, and to make them examples and to make them the inheritors.

And to establish them in the earth, and to show Pharaoh and Haman and their hosts which they feared from them." (28: 5-6)

Oh for righteousness with Allah and giving priority to His pleasure every time the oppressed and downtrodden is repaid so that the oppressor may realize that the oppressed is closer to Allah and His Apostle than he is. But as it is, Allah, the Most Mighty, the Most Wise, has willed in His wisdom that the tyrannical oppressor should persist in his oppression protected by the sins of the oppressed and the maltreated. The latter's misbehaviour is a great cause for mercy in regard to the oppressor; he is forgiven some of his sins on that account; this situation also relates to the beggar and the begged one: when the begged one declines to help the indigent, the begged one is forgiven some of his misdeeds, because of the beggar's falsehood; but if the beggar were truthful, the begged one would be a real loser to deny him help. Other similar instances are those of the burglar and the robber who are partly justified by the money-owners' failure to fulfill what they are supposed to do in the eye of Allah. If they were to observe what is ordained by Allah in connection with the money, Allah would preserve it for them. This also is a glaring example of the wisdom of Allah! It enables an observer to discern one of the mysteries of destiny and the hierarchy of dominance in the world; how hierarchies of dominance are allowed to stay, and the oppressors and bullies to have their way! Glory be to Him Whose every deed bespeaks of His wisdom and embodies compelling evidence of His mercy! Even when animals trespass on people's property and provision, they are behaving in retribution for humans' misbehaviour; otherwise no such aggression would have occurred.

This digression might prove, for those who reflect on it, more useful than many of the above chapters, but only for those who contemplate it and ponder over it. It will be a very rewarding exercise, but guidance comes from Allah.

It is recounted that a cattle owner used to mix milk with water before selling it, claiming that it was unmixed. So Allah sent on his sheep a flood that killed them. He was puzzled. So someone came to him in his dream and explained: Are you puzzled over the flood's drowning your sheep? Well, the cause is those drops of water which you used to mix with milk! They multiplied until they were a flood! By taking a lesson from this parable you can apply it to your and others' conduct, and it will dawn on you that Allah stands for truth, that He keeps a watch on each living soul to see what it earned, that He does not wrong even as little as the weight of an ant!

Regard also the wisdom of Allah, the Most Mighty, the Exalted, in holding rain from His servants, and penalizing them with draught after they have failed to pay zakat (money due), by which they deprive the needy of their right! For holding from the indigent what is due to them, observe how they are deprived and cut off from the source of food (i.e. rain)! In this way Allah is telling them, by deeds rather than words: "You have failed to fulfill what you are supposed to do, and so you are deprived of rain. So why do you not invoke rain by offering from what you possess in your hands that which is due to Allah!"

Reflect now on the Allah's wisdom as implied in diverting guidance and faith from the hearts of those who drive people away from guidance and faith! He drove them away from that which they drove His servants away from, misguidance for misguidance, and deprivation for deprivation. In the same way, observe the wisdom embodied in cursing the riches of usurers and letting loose financial disasters on them, the same as they did to the possessions of others, bringing them to nothingness and destroying them with usury! They were penalized with destruction for destruction! You seldom see a usurer but his destiny one day is destruction, lack of funds and destitution.

Allah's ways with creation

Consider now the wisdom of Allah as illustrated in letting loose an enemy of His to attack His creatures if the powerful persecute the weak, and the maltreated are not backed to get even with the oppressor. See how He sends on people enemies that do to them as they did to the weak and to their subjects; it is exactly tit for tat! This is the way of Allah, from the day He created the world to the day He folds back the earth, and brings it back to its first state. Regard His wisdom when He deems that the kings, rulers and governors of humans should exactly correspond to people's behaviour! It is as if their deeds materialize into governors and kings! If they behave well, their kings will be upright, and if they misbehave, so will their kings. If they persecute others, their rulers will persecute them, and if they are crooks, so will be their rulers ; if they hold back the due of Allah and behave miserly concerning that, their kings and rulers will hold back what is due to them and behave meanly concerning it. If they extort from the weaker people what is not their right to take when offering their services, their kings will extort from them what is not right for them to take, tributes and tolls will be levied on them. Whatever they extort from those weaker than them will be extorted from them by force at the hands of kings. Their rulers have been the crystallization of their behaviour. It is not right that wisdom should appoint as a ruler of the sinful and crooked, one who is different from them. For instance, in the case of the early Muslims, they were the leading generations in devoutness and righteousness, and so were their rulers. And then, when they declined, their rulers declined. In our own time, the wisdom of Allah denies us rulers like Mu'awiah and Umar bin Abdul-Aziz, to say nothing of Abu Bakr and Umar bin Al-Khattab. Our rulers are rather of our own character, and the preceding generations had rulers of their own calibre. In both cases wisdom is maintained and realized. If the shrewd reader makes a mental survey of these facts, he will discover such aspects of the Divine wisdom and its manifestations in the operative destiny, both visible and concealed, exactly the same in both creation and commandments! So never commit the folly of assuming that any of Allah's manifestations of destiny is done for anything other than absolute wisdom. Indeed, all forms of judgements and fate from Allah are realized for utmost wisdom and justification. But feeble minds are veiled by their feebleness from perceiving the truth, in the same way as feeble eyes, like the bat's, are too weak to look at the sun. The feeble minds come upon falsehood and find it compatible with their activity; and so they forge ahead, uttering and chattering, in the same way as a bat would find in the night its chance to fly and roam. It is in fact as expressed by a poet:

> Bats which blink during the daylight,
>
> Find their chance in the dark of the night.

The wisdom of transforming some humans to animals

Reflect on the wisdom of Allah as demonstrated in the punishment of past people, whose penalties were made to fit their sins. Read for example the following verses from the Qur'an:

﴿ وَعَادًا وَثَمُودَا۟ وَقَد تَّبَيَّنَ لَكُم مِّن مَّسَٰكِنِهِمْ ۖ وَزَيَّنَ لَهُمُ ٱلشَّيْطَٰنُ
أَعْمَٰلَهُمْ فَصَدَّهُمْ عَنِ ٱلسَّبِيلِ وَكَانُوا۟ مُسْتَبْصِرِينَ ○ وَقَٰرُونَ وَفِرْعَوْنَ وَهَٰمَٰنَ ۖ
وَلَقَدْ جَآءَهُم مُّوسَىٰ بِٱلْبَيِّنَٰتِ فَٱسْتَكْبَرُوا۟ فِى ٱلْأَرْضِ وَمَا كَانُوا۟ سَٰبِقِينَ ○ فَكُلًّا
أَخَذْنَا بِذَنۢبِهِۦ ۖ فَمِنْهُم مَّنْ أَرْسَلْنَا عَلَيْهِ حَاصِبًا وَمِنْهُم مَّنْ أَخَذَتْهُ ٱلصَّيْحَةُ وَمِنْهُم
مَّنْ خَسَفْنَا بِهِ ٱلْأَرْضَ وَمِنْهُم مَّنْ أَغْرَقْنَا ۚ وَمَا كَانَ ٱللَّهُ لِيَظْلِمَهُمْ وَلَٰكِن
كَانُوٓا۟ أَنفُسَهُمْ يَظْلِمُونَ ﴾ [العنكبوت: ٣٨-٤٠]

"And the tribes of 'Aad and Thamud! Their fate is manifest unto you from their ruined and deserted dwellings. Satan made their deeds seem fair unto them and so debarred them from the Way, though they were keen observers.

And Korah, Pharaoh and Haman! Moses came unto them with clear proofs of Allah's sovereignty, but they were boastful in the land. And they were not winners in the race.

So We took each one in his sins; of them was he on whom We sent a hurricane, and of them was he who was overtaken by the Awful Cry, and of them was he whom We caused the earth to swallow, and of them was he whom We drowned. It was not for Allah to wrong them, but they wronged themselves." (29: 38-40)

Consider how the Lord, in His judgement, willed that certain people should be transformed into various forms, corresponding to their sins. As a certain people let their hearts be transformed to the dispositions and natures of a kind of animal, it was just right that their forms should be transformed to that of the same animal, so that there is correspondence and complete fit, and this is quite just. Apply this to people who were changed into apes or monkeys, how they had justified that by adopting the qualities, behaviours and dispositions of the respective animals. If you are of the careful examiners you can find an affinity between those ancient peoples and the features of their modern successors; you will see the qualities plain despite the disguise of human form. Observe the affinity of apes in the features of the fraudulent and crooked who have little sense. They are even the least endowed intellectually and are the perpetrators of fraud, guile and wrong-doing in their grossest and crudest form. If you fail to read that in their faces, then you are not one of the careful examiners. Observe also the affinity with pigs in the features of other people, as sinful as the above ones, especially those who are antagonistic to the righteous servants of Allah, who are next only to messengers in status. They are the Companions of the Prophet ﷺ. You can see that affinity plain on the faces of the Rafidah,[4] plain to every believer, literate or illiterate. It shows or hides in accordance with the degree of piggishness and wickedness of the heart. The pig itself is the basest among animals and the worst-behaved. It is unique in declining to eat healthy food, and when a human defecates, a pig hastens to the excretion. Think of the similarity of such behaviour to that of the adversaries of the Prophet's Companions; you will see it justly and rightly applicable to them. They took a hostile attitude to the purest and most righteous of Allah's servants and announced their renouncing of them, while they were loyal to every enemy of the Companions, such as the Christians, the Jews and the idolaters. Throughout history, they sought the support of disbelievers in their fight against believers who were loyal to the Companions of the Messenger ﷺ, even declaring that they themselves were better than the Companions. So what is more apt and fit than likening them to pigs. If you fail to see the affinity in their faces, then you are not among the clear sighted.

As for the traditions of the Prophet ﷺ concerning the metamorphosis of certain individuals of the above category into pigs at the time of their death, they are as numerous as to be of absolute authenticity ('mutawatir' in the terminology of scholars); those traditions are too many to be listed here. We refer the reader to a booklet on the subject by Al-Hafedh Abdul-Wahid Al-Maqdisi.

Consider also the wisdom manifested in exterminating some previous nations by catastrophes despite their usual longevity, physical strength, and boastfulness in challenging Allah and His messengers. In contrast, after life-spans got shorter, and bodies became less resistant to the torture of natural disasters, they were stopped, and from then on disbelievers were tormented by the hands of believers. And so wisdom is maintained in both cases, each proper at its own time.

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[4] An unorthodox Muslim sect who are hostile to many of the Companions of the Prophet. They are also known as Shiites.

Wisdom of sending of messengers

Consider the wisdom of Allah reflected in sending messengers to the various peoples in constant succession, each succeeding his predecessor after his decease; this is due to the peoples' need for frequent messengers and prophets, as their minds were weak; and they did not take the message of the previous messenger in earnest. Things had changed, however, by the time of the prophethood of Muhammad bin Abdullah, Allah's Messenger and Prophet, ﷺ. The Lord sent him to convey the message to more enlightened intellects, to keener minds and better-informed nations. The message revealed to Prophet Muhammad ﷺ was the maturest from the earliest days of mankind to his own time. So Allah blessed the Muslim ummah (nation) with the perfection of its messenger, the perfection of its religion, the perfection of its minds, the rightness of its intellects, so that they are in no need of a messenger to succeed Muhammad ﷺ. Instead, Allah chose from the Muslim ummah devout scholars who guard the Prophet's shari'ah; He entrusted them with preserving the shari'ah, with transmitting it safely into the hands of their successors, to implant it into the minds of like-minded persons, in a way that they did not need another messenger or a new prophet. It is for such aspects that the Prophet ﷺ said:

«إِنَّهُ قَدْ كَانَ قَبْلَكُمْ فِي الأُمَمِ مُحَدَّثُونَ فَإِنْ يَكُنْ فِي أُمَّتِي أَحَدٌ فَعُمَرُ»

"There were amongst the past peoples inspired people. If there is one in my ummah, it would be Umar."[5] Here, the Prophet, ﷺ speaks in affirmation in the case of previous peoples, that there *were* inspired persons amongst them; while he makes the existence of such persons in his ummah conditional, using the subjunctive *'if'*. This should not, however, be construed as a proof of inferiority in this ummah in comparison with the earlier peoples; it is on the contrary a sign of the superiority of this ummah. It is because of its perfectness, the perfectness of its Prophet and the perfectness of his shari'ah that this ummah is not in need of an inspired person. If such a person does appear, he will be fit to assist and enlighten, rather than to be followed. This ummah finds its contentment in the message of its Prophet ﷺ without the support of dreams, inspiration, introspection or clairvoyance. Previous peoples, on the other hand, needed such clairvoyants, and so inspired persons were raised among them. You should not assume that the selection of Umar, may Allah be pleased with him, to be an inspired person rather than Abu Bakr implies a preference for the former over the latter. On the contrary, it is that Abu Bakr, because of his perfect saturation with the message of prophethood, his being thoroughly steeped in its tenets, is in no need of additional clairvoyance or inspiration. So reflect long on this aspect, and give it its due of contemplation; think over its implication of the overwhelming wisdom of Allah, the Wise, the Knowing; think in its light of the Messenger of Allah ﷺ as the most perfect of His slaves, the bearer of the most perfect message, his ummah being likewise the most perfect of peoples.

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[5] Reported by Al-Bukhari and Muslim.

Though this section is a diversion, it is one of the most beneficial sections. Had I not been guarding against boring the reader, I would have expounded on the subject, adding a lot of evidence and examples. It has been the bounty of the Generous Lord that He guided me to the truth concerning the matters raised here. It is to Him I turn to fulfill His favour. All power is from Allah, the Most High, the Most Great.

Chapter Four

Nature

﴿وَٱلْأَرْضَ فَرَشْنَٰهَا فَنِعْمَ ٱلْمَٰهِدُونَ﴾ [الذاريات: ٤٨]

"And the earth have We laid out; how gracious is the spreader thereof."

Al-Qur'an (51:48)

Creation of the world

Ibn Al-Qayyem goes on to say the following:

Reflect on the creation of this world, the composition of its parts, its organization having the best system; all that inevitably points to the perfect ability of the Lord, His omniscience and the infinity of His wisdom and kindness! If you regard the world you will find it like a constructed house, well-equipped with all its appliances, provisions and supplies. The sky is its roof, raised above the world; the ground is its floor, mattresses and carpets; well-adapted for the convenience of the dwellers; the sun and the moon are glowing lights above it; the stars are sparkling over it like decorative lamps, signals for the traveller around this world. The minerals and gems stored beneath it are like treasures and hoards, or like well-stuffed storages prepared for any who needs them; the plants in their variety and abundance fulfill man's requirements, the animals in their diversity offer him so many services; some are riding-animals, some milk-giving animals, some meat-providing animals; some animals provide clothing, furniture and tools, some guard man as they are ordained to do, guarding him while asleep, set against what may cause him harm or danger. Were it not for the control of man over certain fierce creatures that repulse other creatures, there would be no hope of survival for the human being. Man is given a royal status in the world; he is authorized to dominate those creatures, to employ them in carrying out his orders and directions. In all this we can witness the most evident indication that the world is the creation of a Wise, Omnipotent and Omniscient Lord, Who designed it to the best design, ordered it to the most perfect discipline; we can perceive that the Creator is impossible to be more than one, that He is the One God, with no god but He, exalted is He above what the evil-doers say. It is manifest that if there were another god in the heavens or the earth their system would be ruined, and their system would be thrown out of order, and their habitability would come to a stop. If the body is impossible to admit two equal and coordinate souls, which is a concept contrary to the simplest mind and the innate nature, how is it conceivable that the great universe could have two sovereign Lords. It is as is well-expressed by the Qur'an:

﴿لَوْ كَانَ فِيهِمَآ ءَالِهَةٌ إِلَّا ٱللَّهُ لَفَسَدَتَا ۚ فَسُبْحَـٰنَ ٱللَّهِ رَبِّ ٱلْعَرْشِ عَمَّا يَصِفُونَ﴾
[الأنبياء: ٢٢]

"If there were therein [the heaven and the earth] gods beside Allah, then verily both [the heaven and the earth] had been disordered." (21: 22)

﴿مَا ٱتَّخَذَ ٱللَّهُ مِن وَلَدٍ وَمَا كَانَ مَعَهُۥ مِنْ إِلَـٰهٍ ۚ إِذًا لَّذَهَبَ كُلُّ إِلَـٰهٍۭ بِمَا خَلَقَ وَلَعَلَا
بَعْضُهُمْ عَلَىٰ بَعْضٍ ۚ سُبْحَـٰنَ ٱللَّهِ عَمَّا يَصِفُونَ ○ عَـٰلِمِ ٱلْغَيْبِ وَٱلشَّهَـٰدَةِ فَتَعَـٰلَىٰ عَمَّا
يُشْرِكُونَ﴾ [المؤمنون: ٩١، ٩٢]

"Allah has not chosen any son, nor is there any god along with Him; or else each god would have assuredly championed that which he created, and some of them would assuredly have overcome others. Glorified be Allah above all that they allege." (23: 91)

This should be a compelling evidence that challenges all men, past and present, to refute in any sensible way, or to give a better explanation. It is only those who have failed to fathom it who try to criticise this evidence. It is only my caution against boring the reader that prevents me from elaborating the two proofs in the verses and unveiling the amazing mystery and glaring evidence they imply. But it is my intention, Allah willing, to write a separate book on the proofs of the Oneness of God.

Figure "77"

Distribution of human beings:
Another sign of the Lord's Wisdom

The Seas

One of the most striking signs and capturing miracles of the Lord is the seas which surround dry land, in the form of inlets and bays from the great ocean which engulfs the entire land. It is so extensive that the exposed land with all its mountains and cities is, in comparison with the water body, like a small island in the midst of a great sea. The rest of the land is submerged under water. It is only the Power and Will of the Almighty Allah that holds water from submerging land and rising over it – to rise like this is in fact in the nature of water, and that is what puzzles the more sensible naturalists who are baffled by the reason that causes the rising above the sea of a certain part of land, though it is in the nature of water to rise over it and submerge it. They have no explanation of this but to attribute it to divine wisdom and the eternal mercy of the Lord who willed that circumstances should be smoothed for the land animals to exist. This is a truth, but it should lead one to submit to the Ability of the Lord; to His Will and Destiny; to His Knowledge, Wisdom and all His Attributes of perfection. The proofs are compelling in that respect.

A tradition of the Prophet's is relevant here. Imam Ahmad reports in his Musnad that the Prophet ﷺ said:

«مَا مِنْ يَوْمٍ إِلاَّ وَالْبَحْرُ يَسْتَأْذِنُ رَبَّهُ أَنْ يُغْرِقَ بَنِي آدَمَ»

"Not a day passes but the sea asks the Lord whether He permits that it drowns mankind."[1] Some have taken this to be the interpretation of the Qur'anic verse:

﴿وَٱلْبَحْرِ ٱلْمَسْجُورِ﴾ [الطور: ٦]

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[1] Reported by Ahmad (1/43), but rated by Sheikh Ahmad Shaker, in his editing of the Musnad, as of 'weak' authenticity (See 1/33).

"And the sea kept filled." (52:6) Ibn Attiah, among others, states that it is the held-back sea. This group supports this with a reference to the word 'masjoor' mentioned in the above verse. Another derivative of that word, 'sajoor', denotes a leash, made from plant or metal, used to control a dog. By affinity, they continue, if Allah had not held back the sea and restrained it, it would flood the land. The land, relative to the sea, is like a house relative to all dry land.

It is a source of exceeding wonder to observe the sea and all the wondrous creatures in it, displaying a very wide diversity of species, shapes, sizes, functions, benefits (and harm) and colours. There are in the sea animals that seem like mountains, so huge that nothing on earth compares with them. Some of these seem to voyagers like an island; the similarity is so close that they actually land to rest there, and start a fire; and when the animal feels the heat it moves, and it is only then that the travellers realize that it is an animal. There is no species on land but it has a counterpart in the sea, even man, the horse, the camel and so forth. There are, besides, so many species that have no counterparts at all on land. In addition to that are its precious stones, pearls and corals. You see how a pearl is encased in a casket, the shell, that serves as a nest for it, providing it with protection and safety. Some pearls are hidden, never touched by hands. Observe how the coral has grown at the bottom of the sea out of solid rock below water, similar to a tree. The sea also contains other things like amber and valuable things that are thrown out by the sea, or are fished out.

Observe also the miracle of the ships which sail the sea, cutting their way through it without the need for leader or driver – their leading force being only the wind that Allah directs to run them. If that leading force were held back, then the ships would stay idle on the surface of water. In this respect, Almighty Allah tells us in the Qur'an:

﴿ وَمِنْ ءَايَٰتِهِ ٱلْجَوَارِ فِى ٱلْبَحْرِ كَٱلْأَعْلَٰمِ ○ إِن يَشَأْ يُسْكِنِ ٱلرِّيحَ فَيَظْلَلْنَ رَوَاكِدَ عَلَىٰ ظَهْرِهِۦٓ
إِنَّ فِى ذَٰلِكَ لَءَايَٰتٍ لِّكُلِّ صَبَّارٍ شَكُورٍ ﴾ [الشورى : ٣٢، ٣٣]

"And of His portents are the ships, like banners on the sea;

If he wills, He calms the wind so that they keep still upon its surface – Lo! herein verily are signs for every steadfast, grateful heart." (42: 32-33)

﴿ وَهُوَ ٱلَّذِى سَخَّرَ ٱلْبَحْرَ لِتَأْكُلُوا۟ مِنْهُ لَحْمًا طَرِيًّا وَتَسْتَخْرِجُوا۟ مِنْهُ حِلْيَةً
تَلْبَسُونَهَا وَتَرَى ٱلْفُلْكَ مَوَاخِرَ فِيهِ وَلِتَبْتَغُوا۟ مِن فَضْلِهِۦ وَلَعَلَّكُمْ
تَشْكُرُونَ ﴾ [النحل : ١٤]

"And He it is Who has constrained the sea to be of service that you eat fresh meat from thence, and bring forth from thence ornaments which you wear. And you see the ships ploughing it that you, mankind, may seek of His bounty, and that haply you may give thanks." (16: 14)

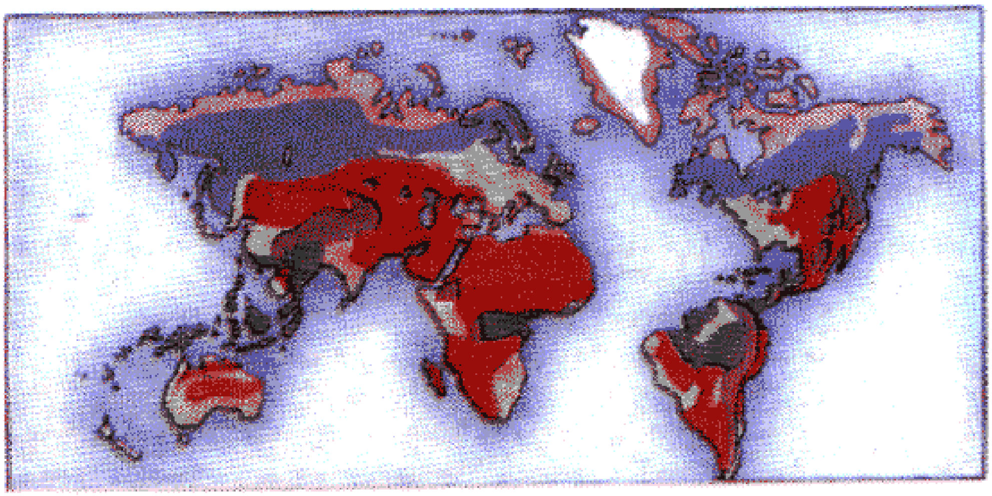
Such a sign is this and such evidence! It is for this reason that this blessing is so often repeated in Allah's Book. On the whole, the sea's wonders and marvels are so numerous that no one but Allah is capable of making an inventory of them. And in this light we can understand a verse like the following:

﴿ إِنَّا لَمَّا طَغَا ٱلْمَآءُ حَمَلْنَٰكُمْ فِى ٱلْجَارِيَةِ ○ لِنَجْعَلَهَا لَكُمْ تَذْكِرَةً وَتَعِيَهَآ أُذُنٌ وَٰعِيَةٌ ﴾

[الحاقة : ١١، ١٢]

"Lo! when the waters rose, We carried you upon the ship, that We might make it a memorial for you, and that remembering ears might remember." (69: 11-12)

Figure "78"



Dusty Plain Regions. Some grass and palm trees due to occasional rain.	Leafy Forests. Hot in summer, cold in winter.	Tundra. Extreme cold with fierce winds. Pine forests.
Desert Regions. Very hot climate but cold nights. Very little rain.	Tropical forests. High temperatures year round. Lots of rain.	Low temperatures all year round.
Mountains.	Ice lands.	Grassy Meadows and Pastures.

The Earth

If you regard the earth and its creation, you will see that it is one of the most striking of the Lord's miracles and wonders. He made it a resting place, spread out for mankind, constrained it to serve His servants, supplied it with their provisions, food and means of survival. He provided it with ways that allow them to move around seeking their needs and manipulations; stabilized it with mountains, which act like pegs that hold it, so that the earth does not sway with its inhabitants. He stretched it, paved it, levelled and flattened it and spread it out, extended it in all directions, made of it a receptacle for living creatures that will last as long as they last; made it a shroud for the dead that envelopes them in its belly once they are buried – its surface is for the living and its interior is for the dead. Its vital importance may be attested by the frequency of its mention by the Almighty in His Scripture. He urged His servants to contemplate it and reflect on its creation. Some of the verses concerning the earth are the following:

﴿ وَٱلْأَرْضَ فَرَشْنَٰهَا فَنِعْمَ ٱلْمَٰهِدُونَ ﴾ [الذاريات : ٤٨]

"And the earth have We laid out; how gracious the Spreader thereof." (51: 48)

﴿ ٱللَّهُ ٱلَّذِى جَعَلَ لَكُمُ ٱلْأَرْضَ قَرَارًا ﴾ [غافر : ٦٤]

"Allah it is Who appointed for you the earth for a dwelling-place," (40: 64)

﴿ ٱلَّذِى جَعَلَ لَكُمُ ٱلْأَرْضَ فِرَٰشًا ﴾ [البقرة : ٢٢]

"Who has appointed the earth a resting-place for you," (2: 22)

﴿ أَفَلَا يَنظُرُونَ إِلَى ٱلْإِبِلِ كَيْفَ خُلِقَتْ ○ وَإِلَى ٱلسَّمَآءِ كَيْفَ رُفِعَتْ ○ وَإِلَى ٱلْجِبَالِ كَيْفَ نُصِبَتْ ○ وَإِلَى ٱلْأَرْضِ كَيْفَ سُطِحَتْ ﴾ [الغاشية : ١٧ - ٢٠]

"Will they not regard the camels, how they are created? And the heaven, how it is raised? And the hills, how they are set up? And the earth, how it is spread?" (88: 17-20)

﴿ إِنَّ فِى ٱلسَّمَٰوَٰتِ وَٱلْأَرْضِ لَءَايَٰتٍ لِّلْمُؤْمِنِينَ ﴾ [الجاثية : ٣]

"Lo! in the heavens and the earth are portents for believers." (45: 3)

And many similar verses. Observe, then, the land when it is barren, neglected and dead; and see then how, once the Lord lets down rain, it will quiver, sprout, rise, and become resplendent with growth, growing all kinds of marvellous crops. It brings out plants wondrous in appearance and quality, plants that please observers, and give liberally to the extended hand. It produces provisions diverse in quality, amount, shape, colour, and benefits; fruit, vegetables, medical plants, grazing plants for animals and food for birds.

You see how He causes the same rain to fall on various tracts of land, but each grows plants that are diverse in colour, shape, ordour, taste and benefit, despite the identical supply and locale. This fact is pointed out in a verse of the Qur'an:

﴿ وَفِي ٱلۡأَرۡضِ قِطَعٞ مُّتَجَٰوِرَٰتٞ وَجَنَّٰتٞ مِّنۡ أَعۡنَٰبٖ وَزَرۡعٞ وَنَخِيلٞ صِنۡوَانٞ وَغَيۡرُ صِنۡوَانٖ يُسۡقَىٰ بِمَآءٖ وَٰحِدٖ وَنُفَضِّلُ بَعۡضَهَا عَلَىٰ بَعۡضٖ فِي ٱلۡأُكُلِۚ إِنَّ فِي ذَٰلِكَ لَأٓيَٰتٖ لِّقَوۡمٖ يَعۡقِلُونَ ﴾ [الرعد: ٤]

"And in the earth are neighbouring tracts, vineyards, ploughed lands, and date-palms, like and unlike, which are watered with one water. And We have made some of them to excel others in fruit. Lo! herein verily are portents for people who have sense." (13: 4)

How is it that those diverse germs grow from the same place, from the belly of the same mother, fertilized by the same substance? It is indeed the making of Allah, Who excelled in everything He did, beside Whom there is no other god. Had this not been one of His most compelling signs, He would not have called to it the attention of His servants, urging them to contemplate it!

He did that, for instance, in the following words of the Qur'an:

﴿ وَتَرَى ٱلْأَرْضَ هَامِدَةً فَإِذَآ أَنزَلْنَا عَلَيْهَا ٱلْمَآءَ ٱهْتَزَّتْ وَرَبَتْ وَأَنۢبَتَتْ مِن كُلِّ
زَوْجٍۭ بَهِيجٍ ○ ذَٰلِكَ بِأَنَّ ٱللَّهَ هُوَ ٱلْحَقُّ وَأَنَّهُۥ يُحْىِ ٱلْمَوْتَىٰ وَأَنَّهُۥ عَلَىٰ كُلِّ شَىْءٍ قَدِيرٌ ○ وَأَنَّ
ٱلسَّاعَةَ ءَاتِيَةٌ لَّا رَيْبَ فِيهَا وَأَنَّ ٱللَّهَ يَبْعَثُ مَن فِى ٱلْقُبُورِ ﴾ [الحج : ٥-٧]

"And you see the earth barren, but when We send down water thereon, it does thrill and swell and put forth every lovely kind of growth. That is because Allah, He is the Truth. Lo! He quickens the dead, and lo! He is Able to do all things;

And because the Hour will come, there is no doubt thereof, and because Allah will raise those who are in the graves." (22: 5-7)

This sign and the preceding one concerning the embryo, are used by the Lord as evidence of the five matters listed in the verses, and a binding proof of taking heed of them.

Regard, too, how the Lord stabilized the earth with the high-rising, solid, established, and hard mountains. He established them well, elevated them, and destined them to be the most solid part of the earth; so that they do not erode over the ages and by the work of successive rains and winds. He crafted them well, placed them carefully, and provided them with diverse and ample benefits, minerals and springs; then he guided men to discover those minerals, inspired them to extract them, taught them how to make from them coins, jewelry, decoration pieces, clothes, arms and the various other useful tools. Without guidance from the Almighty, men would never have had the knowledge of that or the ability to manipulate it.

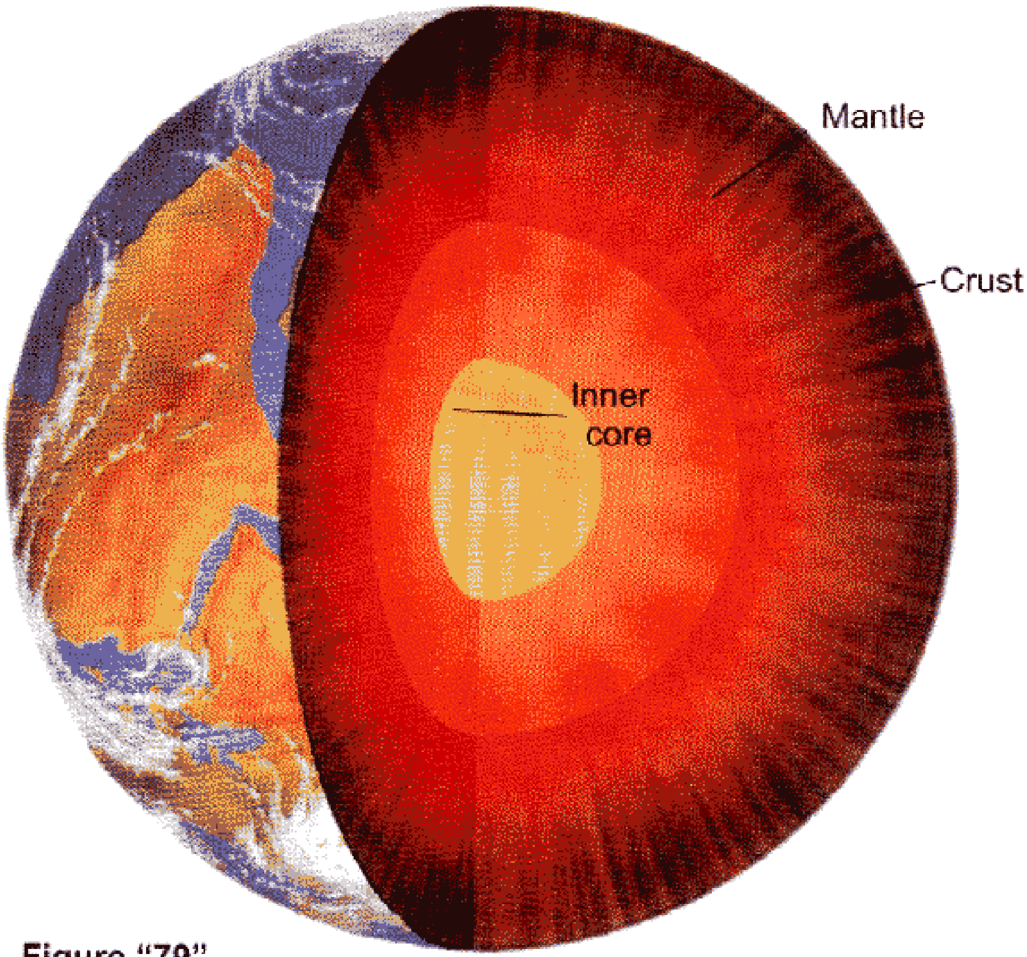

Mantle
Crust
Inner
core

Figure "79"

Cross- section of the earth

As the sketch shows, the inner temperature of the earth is as high as 4000° centigrade ! This is a main reason for making life possible on the earth.

The atmosphere

One of the Lord's wondrous signs is the air, suspended between the sky and the earth, perceived by contact when it moves, its physical existence sensed but not seen. It exists between the sky and the earth, with birds soaring in it, flapping their wings in it, in the same way as sea animals swim in water. Its waves sometimes roll violently the same way as a sea's waves do. When the Lord wills, the air moves mercifully, a harbinger of favour, plenty, and auspicious portent for humans, an impregnating factor for clouds, causing them to bear water, in the same way as a male impregantes a female to bear a child. Such mercy-bearing winds are called: heralds, winnowers and emissary winds. Winds of torture, on the other hand, are called tempestuous, hurricane (in the sea), fatal and fierce (in land). When the Lord wills, He causes the winds of torture to blow, bringing devastation and suffering, a scourge against whomever He wills of His servants. It may bring destruction, bad omen and havoc wherever it passes. Winds blow from different sources, east wind and zephyr, southern and northern; all vastly varied in their benefits and results – some winds are soft and humid, bringing revival and refreshment to plants and animals; others cause drying; some ruin and ravage; some strengthen and solidify, others weaken and enfeeble. It is for this reason that the Almighty speaks of the winds of mercy in the collective, because of their varied benefits and consequences: a certain wind drives clouds, another fertilizes them, another bears them, another nourishes plants. And since winds are varied in their directions and quality, He created for each its counterpart that softens its intensity and harshness, leaving its softness and mercy. The winds of mercy are multiple, while the wind of torture has a singular strength: it blows from a single direction to destroy whatever it is destined to destroy; there is no wind to counter it, to soften it and resist its force. It is like a huge army that advances unresisted until it destroys all that is in its way.

Regard now the words of the Qur'an in that connection, how sublime and expressive, how they always refer to the wind of the land in the plural, while they refer to the wind of mercy of the sea in the singular. Here is an example from the Allah's words:

﴿ هُوَ ٱلَّذِى يُسَيِّرُكُمْ فِى ٱلْبَرِّ وَٱلْبَحْرِ حَتَّىٰٓ إِذَا كُنتُمْ فِى ٱلْفُلْكِ وَجَرَيْنَ بِهِم بِرِيحٍ طَيِّبَةٍ وَفَرِحُوا۟
بِهَا جَآءَتْهَا رِيحٌ عَاصِفٌ وَجَآءَهُمُ ٱلْمَوْجُ مِن كُلِّ مَكَانٍ . . . ﴾ [يونس : ٢٢]

"He it is Who makes you to go on the land and the sea till, when you are in the ships and they sail with them with a fair breeze and they are glad therein, a storm-wind reaches them and the waves comes unto them from every side," (10: 22)

That is because ships sail in a specific direction by the force of wind; if winds that push them were of varied and opposite directions, the ships would have difficulty going ahead. From this it would be clear that the purpose of winds in the sea is diff- erent from those in the land. In the former, an auspicious wind should be unified, unresisted by another wind, and so it is made a single wind, in contrast to the many winds of the land. It can be further observed that this ethereal creature, the wind, which the Almighty Lord has endowed man- kind with, can be split and pierced by the weakest creature; notwithstanding its force and might that can weaken huge, solid invincible bodies; displacing them, fragmenting them, and bearing them on its surface. See for instance how a water-skin, when filled with water, may not be pushed down and sunk by even a strong man, despite its own weight, and the man's weight and strength-

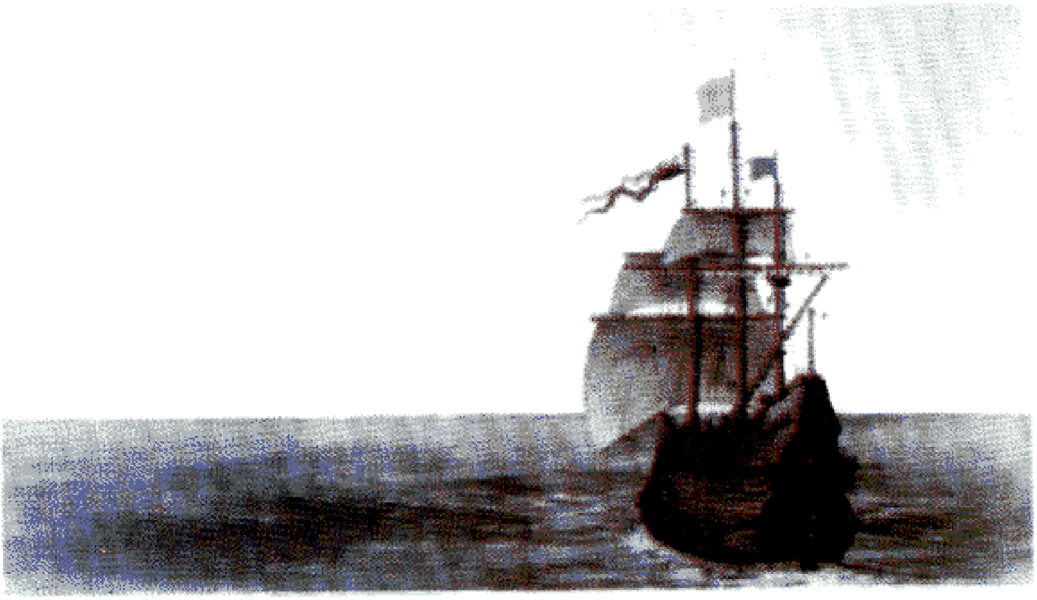


Figure "80"

Sailing ship

that in spite of all the water's softness and lightness. This weak thing, the water skin, resists water, whereas water can overcome solid, strong bodies. By this wise arrangement, the Lord maintains ships on the surface of water, despite their great weight, and the huge loads they carry. Likewise, all hollow bodies, filled with air, resist sinking, because air resists sinking in water, and so it holds up weighty ships with all their freight. It gives one food to think how this impressive, huge body, the ship, borrows its ability to float from the soft, ethereal body, the air, to save it from sinking. It behaves in the manner of a man who fell in a well, but catches the edge of the clothes of a strong man, and thus gets saved from falling. So glory be to Him who let this bulky vessel maintain its floating by the work of the soft air, without any visible link or attachment.

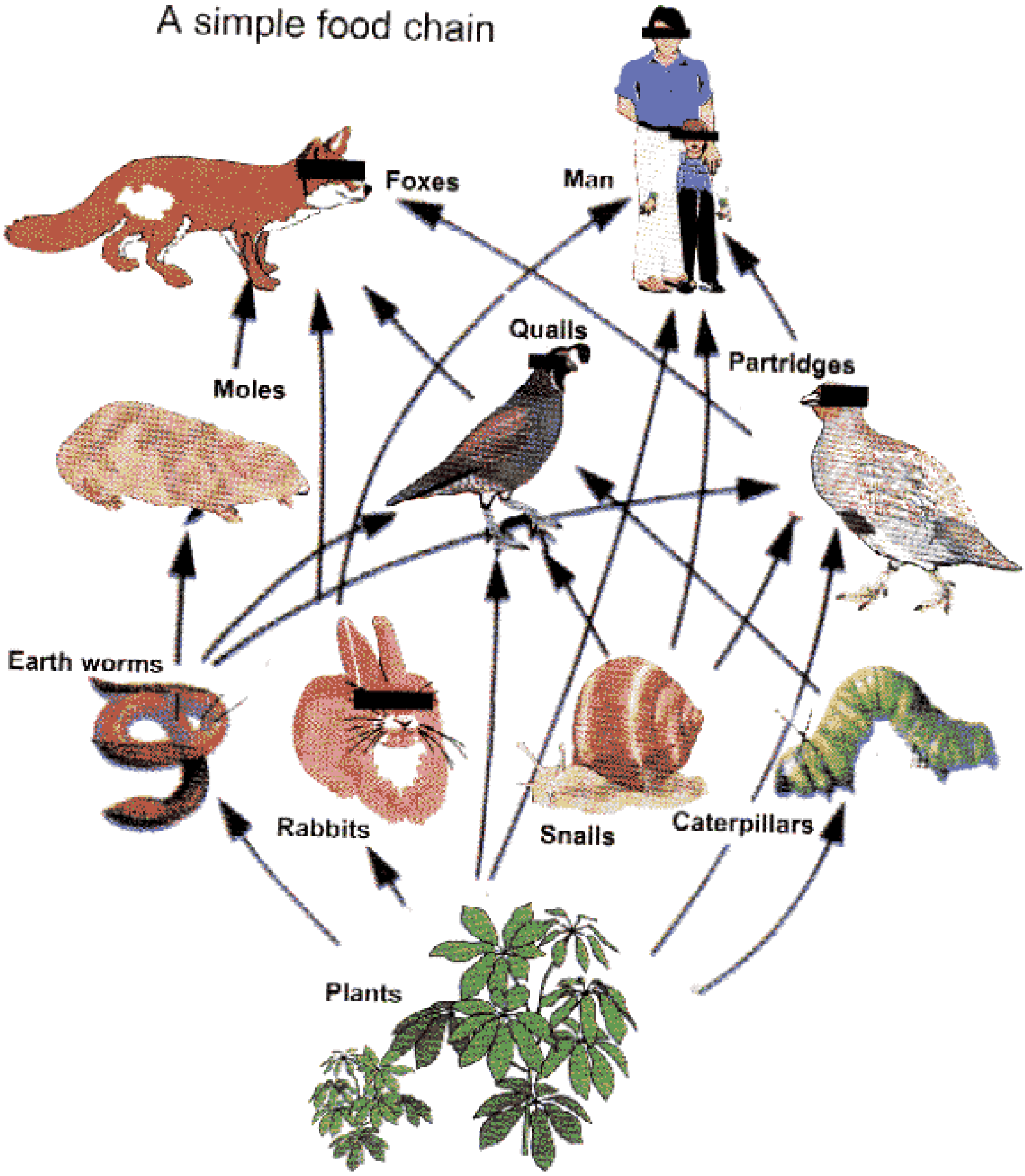

A simple food chain
Foxes
Man
Quails
Partridges
Moles
Earth worms
Rabbits
Snails
Caterpillars
Plants

Figure "81"

Reflect now on the following verse from the Qur'an:

﴿ وَٱلسَّحَابِ ٱلْمُسَخَّرِ بَيْنَ ٱلسَّمَآءِ وَٱلْأَرْضِ . . . ﴾ [البقرة: ١٦٤]

"and the clouds obedient between heaven and earth," (2: 164).

Have you observed how the Almighty Lord causes the cloud to form, by effect of the wind, at first still thin and fragmentary, then He brings together portions of it, gathers them, then causes winds, called fertilisers by the Lord, to fertilize them; He then moves that cloud, borne on other winds, to be above such land that is in need of it. Once it is above that land, it pours its load of water on it. Then the Lord sends the wind to scatter water and atomize it, lest it should cause harm if it descends in its bulk. Once the land has taken its fill, and what it needs, it stops falling, and departs from that spot. Such clouds are a quenching of the land's thirst, borne on the winds. The Prophet ﷺ said regarding some clouds, as reported by Al-Tirmidhi and others:

«هَذِهِ رَوَايَا الأَرْضِ يَسُوقُهَا اللهُ إِلَىٰ قَوْمٍ لاَ يَشْكُرُونَهُ وَلاَ يَذْكُرُونَهُ»

"These clouds of the land are driven by Allâh to people, though they fail to remember the Lord or thank Him." Clouds, then are a bearer of provision for humans and others, and a supplier of their food.

When Al-Hassan Al-Basri saw the clouds he used to say: "By Allâh, those clouds have provisions for you, but you prevent that provision by your sins and misdeeds."[2]

There is a tradition reported in Sahih Muslim, in which it is narrated

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[2] Meaning that water is the germ of life, as described by a verse of the Qur'an

﴿وَجَعَلْنَا مِنَ ٱلْمَآءِ كُلَّ شَيْءٍ حَيٍّ﴾ [الأنبياء : ٣٠]

"and We made every living thing from water," (21: 30). When Al-Imam Al-Hassan Al-Basri describes water as men's provision he means it is the basis of their life, since man cannot survive without water for more than three days.

«بَيْنَا رَجُلٌ بِفَلَاةٍ مِنَ الأَرْضِ إِذْ سَمِعَ صَوْتًا فِي سَحَابَةٍ: اسْقِ حَدِيقَةَ فُلَانٍ. فَمَرَّ الرَّجُلُ مَعَ السَّحَابَةِ حَتَّى أَتَتْ عَلَىٰ حَدِيقَةٍ، فَلَمَّا تَوَسَّطَتْهَا أَفْرَغَتْ فِيهَا مَاءَهَا. فَإِذَا بِرَجُلٍ مَعَهُ مِسْحَاةٌ يَسْحَى المَاءَ بِهَا، فَقَالَ: مَا اسْمُكَ يَاعَبْدَاللهِ؟ قَالَ: فُلَانٌ. لِلِاسْمِ الَّذِي سَمِعَهُ فِي السَّحَابِ».

That once, while a man passed through a wilderness, he heard a voice coming from a cloud, which said: 'discharge your rain on so and so's orchard.' So the man moved with the cloud, until it was over an orchard; and when it was just above it, it rained all the water it bore. Then he saw a man with a rake, directing the water with it. So he asked him: 'What is your name, O servant of Allah?' 'It is so-and-so,' he replied (the same name the first man had heard from the sky.) [3]

You do well to observe the clouds when they are thick and black, overlaying a pure and bright sky! See how Allah causes the clouds to form whenever He wills, and not before! See how the clouds, though soft and light, carry heavy loads of water, suspended between heaven and earth, until the time Allah wills that they empty their loads of water on the ground! When it falls, it falls in drops, every drop measured accurately by destiny, controlled by the Lord's mercy and judgement. Clouds sprinkle the water, letting it fall in separate drops, not a drop mixing with another, not a drop falling before its time, nor after it; each following the track predetermined for it, never swerving from it; until they reach the earth, each drop reaching the point determined for it, not any other spot. If all the creatures of Allâh converged to create one drop of these, or to count the number of drops for just one moment, they would fail to do so. So think how the Lord sends clouds to nourish men, beasts, birds, tiny insects and ants: He drives the cloud assigned to supply the specific animal at its particular place, next to the determined mountain; and it would reach it at its time of dire need and thirst, at the precise moment.

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[3] Reported by Muslim and Ahmad.

Regard, too, how the Lord lodged water in the earth, and then by its action caused to grow a myriad of plants. Some plants nourish, some season the food; some are digestive, some enfeeble, some are lethal poison, some are sickening; some heal diseases, some cause a chill, some cause heat; a certain plant, as it reaches the stomach, suppresses bile at its source; another as it settles in the stomach turns to bile; another repels phlegm and black bile; another transforms to one of these; one stimulates blood to flow, another represses it; one causes sleep, another dismisses it; one causes elation, one causes its reverse, and so on and on. There is no end to the wonders of plants; there is not a leaf, a branch or a fruit but contains a miracle that beats the understanding of men to encompass or comprehend it in full.

Regulation of body water

Water intake and its disposal by the human body occur according to a meticulous system. Organs like skin, stomach, intestine and kidneys are obviously involved in this system. A very subtle role is also played by certain endocrine glands, most notably, pituitary, adrenal and thyroid. Like food, water goes first into the stomach. Afterward, it is distributed to the various body parts according to their need.

Figure "82"

Archaeologists and geologists keep excavating and investigating plates of the earth in their search for any evidence that reveals the forms of life in ancient history

Water intake itself is controlled by a sophisticated nervous mechanism. As for the quantity of water retained in the body, it is controlled by the amounts of salts of sodium potassium, and calcium. There are three reservoirs where the body keeps the needed quantity of fluid. There are intercellular (in the cell), extracellular (outside the cell), and interstitial (in-between the tissues).

So the water in the body is not pure but salty. Also, strange to say, the structure of the human and animal blood bears some resemblance to the structure of sea water. It is as if the animal, after appearing on the land, reserved in its body the memory of its earlier beginnings from water.

The blood albumin plays a vital part in preserving water in the blood; it strongly attracts water inside the blood vessels. If albumin decreases in the blood, water diffuses out of the vessels and is trapped between cells and blood. This condition causes swelling of the body and can start several other diseases. At times of wars and famines, this condition is the main reason for the swollen bellies or other parts of the human body.

The body suffers very much if it loses large amounts of water for any reason. The first danger is the drying up of water stored between blood and cells. Then, the blood gradually dries up. The greatest danger, however, comes later when the cells begin to dry up. When this happens, extreme thirst and dryness of skin occur. Often, it is accompanied by vomiting that further increases dryness and causes the eyes to sink.

When people die of cholera, the cholera microbe is not the fatal factor; it is rather and an excessive loss of body liquid, a condition usually called dehydration. If the body is supplied water in time, it shows a miraculous recovery. Supplied water the proper amount of saline is sometimes almost like injecting new life in the body.

Since dehydration or the severe loss of body liquid can be fatal, good hospitals have separate sections or units to regulate water in the body. In fact, a special science in medicine, the science of water scale, has appeared.

Fortunately, the human body is quite adept in controlling any imbalance in its substances. If, for any reason, a particular substance gets out of control, its excess or shortage can become a killing poison for the body. And water, that is the source of life, is no exception.

In normal conditions, the body is not poisoned by water, because a number of organs and glands guard it from any such accident. Yet, poisoning by water can occur in some cases. For example, it can occur if someone has taken in a huge amount of water alongwith food having high quantities of salt in it. The first symptom in such a case will be acute head and muscular cramps. These are, then, followed by vomiting and diarrhea. Thus the body tries to reduce the excess of water by its own regulatory mechanisms. The distribution of water in the body may also be disturbed, and the result of any such disturbance is not less serious than that of imbalance in quantity. In this condition, cells are distended with water while dryness spreads around them. This dryness may even destroy the cells while they are flooded with the surrounding water, water that is at their door but cannot offer them any help.

So glory be to Him Who set the balance in your body, a balance that operates without your being conscious of it! This is not the place to elaborate these topics. The point here is to realize that one's life depends on a little bit of water that may not be of any worth in comparison to another amenity. It is to appreciate the extent of Allah's mercy, when He willed that right amounts of water and air are available to every living thing. It is another of His blessings that the most vital thing is the most available and is the cheapest. Allâh Says:

﴿ وَجَعَلْنَا مِنَ ٱلْمَآءِ كُلَّ شَىْءٍ حَىٍّ ﴾ [الأنبياء : ٣٠]

"And we made from the water every living thing." (21:30)

The stability of the earth

Reflect also on the earth, how it is held stable, from the day the Lord created it, so that it forms a habitation and settling-place for animals, plants and objects. It is by this that animals and men are enabled to move about on it, pursuing whatever they like of their interests and needs; taking rest when they like, and going to sleep on it, getting refreshment enough to resume their endeavours. If it were unstable or swaying they would not be able to find peace or comfort upon its surface; no building would stand on it, and no industry or commerce could be performed; agriculture or craft would not be possible. How could humans lead a happy life with the ground swaying beneath their feet? You may take an inkling of what such a state can cause by observing the devastation caused by earthquakes, despite the brevity of time they last. You see how, when this happens, humans are forced to desert their homes and flee from them. In this context the Qur'an says:

﴿ وَأَلْقَىٰ فِي ٱلْأَرْضِ رَوَٰسِيَ أَن تَمِيدَ بِكُمْ. . . ﴾ [النحل : ١٥]

"And He has cast into the earth firm hills that it quake not with you," (16: 15);

﴿ ٱللَّهُ ٱلَّذِى جَعَلَ لَكُمُ ٱلْأَرْضَ قَرَارًا. . . ﴾ [غافر : ٦٤]

"Allah it is Who appointed for you the earth for a dwelling-place," (40: 64);

﴿ ٱلَّذِى جَعَلَ لَكُمُ ٱلْأَرْضَ مَهْدًا. . . ﴾ [طه : ٥٣]

"Who has appointed the earth as a bed," (20: 53).

Instead of 'bed', ﴿ مِهَٰدًا ﴾ [النبأ : ٦] (78: 6) Allah says it is 'an expanse' in another chapter.

There is also a tradition of the Prophet ﷺ reported by Al-Tirmidhi, among others. In it, Anas reports the Prophet ﷺ as saying:

«لَمَّا خَلَقَ اللهُ الأَرْضَ جَعَلَتْ تَمِيدُ، فَخَلَقَ الْجِبَالَ عَلَيْهَا، فَاسْتَقَرَّتْ. فَعَجِبَتِ الْمَلاَئِكَةُ مِنْ شِدَّةِ الْجِبَالِ، فَقَالُوا: يَارَبِّ هَلْ مِنْ خَلْقِكَ شَيْءٌ أَشَدُّ مِنَ الْجِبَالِ؟ قَالَ: نَعَمْ، الْحَدِيدُ. قَالُوا: يَارَبِّ هَلْ مِنْ خَلْقِكَ شَيْءٌ أَشَدُّ مِنَ الْحَدِيدِ؟ قَالَ: نَعَمْ، النَّارُ. قَالُوا: يَارَبِّ هَلْ مِنْ خَلْقِكَ شَيْءٌ أَشَدُّ مِنَ النَّارِ؟ قَالَ: نَعَمْ، الرِّيحُ. قَالُوا: يَارَبِّ هَلْ مِنْ خَلْقِكَ شَيْءٌ أَشَدُّ مِنَ الرِّيحِ؟ قَالَ: نَعَمْ، ابْنُ آدَمَ يَتَصَدَّقُ صَدَقَةً بِيَمِينِهِ، يُخْفِيهَا عَنْ شِمَالِهِ».

"When Allah created the earth it started to sway, and so he created the mountains, and mounted them on its surface, and so it was stabilized. The angels were amazed at the firmness of mountains, and so they asked: 'Is there any of Your creations firmer than mountains, O Lord?' 'Yes,' He said: 'iron.' 'And is there any of Your creation firmer than iron?' they asked. 'Yes,' He said: 'fire.' 'And is there any of Your creation firmer than fire, O Lord?' they asked. 'Yes,' He said, 'wind.' 'And is there any of Your creation firmer than wind, O Lord?' 'Yes,' He said: 'A human who gives a charity with his right hand, hiding it from his left hand.' "[1]

Think also of the great wisdom embodied in the earth's being soft and solid at the same time. If it were too soft, sloppy like mud, no structure could be built, and no animal could walk on its surface; it would cease to be habitable. If it were too hard, like a stone, it would not be suitable for cultivation or planting; it would not be possible to plow it and sow it; it would not be possible to bore wells in it or to erect structures on its surface. It is neither hard like stones, nor sloppy like mud. By the wisdom of its Creator, it is perfectly balanced, a convenient place for animals, in a moderate state between softness and hardness, in a way that realizes all interests.

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[1] Reported by Ahamd and Al-Tirmidhi. Rated by Al-Albanee as of 'weak' authenticity.

The diversity of climates

Reflect also on the great wisdom of the Lord when He willed that the blowing of winds is higher in the north than it is in the south, so that water should flow on the surface of land, irrigating and watering; and then it overflows and pours into the sea. It is as a builder, when he builds a roof, raises one side of it, and lowers the opposite side, to let water run in the direction of the lower side. If it were level, water would stay still on it and would ruin the roof. And so it is with the blowing of wind in every territory – it is higher in the north than it is in the south. Had it not been so, water would stay still on the surface of land, impeding men's striving to produce and seek their interests, blocking ways and paths, and causing harm to people. Is it right in the mind of any thinking human that such arrangement is the result of coincidence, without the designing of the Most Mighty, the Wise, Who did carefully all that He did?

Mountains

Think now of the mountains, an amazing marvel which the ignorant take to be useless masses in the earth not serving any function – indeed they have so many benefits that no one but their Creator and Raiser can reckon. This reminds one of a tradition in which Dammam bin Tha'labah asked the Prophet ﷺ on the day he entered the faith: 'I ask you, by the name of the One who raised the mountains and endowed them with benefits, is it Allah who commanded you to do so and so?'

«اللَّهُمَّ نَعَمْ» 'Oh Allâh, yes,' he answered.

Some of their benefits and uses are the following:

1. Snow falls on them, and stays at their peaks, supplying men with drinking water until it expires. It melts slowly, forming gushing streams, rivers and brooks. From this, a variety of plants, fruits and medical crops grow in hills and lawns that are different from the plants of planes and deserts. If there were no mountains, snow would fall on level ground, melting there in a short time, serving no benefit. Besides, it would cause torrential floods which would destroy everything in their way. This would cause great hardships for people, and a lot of bad consequences that could not be averted.

2. Caves, depressions and supports in their peaks and crests serve as castles and strongholds. They also are used as shelters for humans and animals.

3. Stones are hewn from mountains and chiseled for various buildings and structures, and for grinding.

4. Minerals and precious stones are hidden beneath them, varying from gold, silver, copper, iron and lead to aquamarine, emerald and many other minerals which no human can count in full. Some minerals are so precious that a handful of them is more valuable than many times their equivalent in gold. They are of such great benefits that no one but the Creator, glorified be His name, can reckon.

5. Mountains break the rage of violent winds, soften their sharpness, and prevent them from lashing on the areas beyond them with their full force. Therefore, you find the dwellers in their shade sheltered from violent, harmful winds.

6. They divert floods descending in their beds, directing them to the right or to the left. Otherwise, floods would have destroyed all in their way. Mountains, in this case, are functioning like ramparts and safeguards.

7. They work as landmarks that indicate ways. They do the functions of man-made signs that direct travellers. They have indeed been called landmarks in the Qur'an, in the following verse:

﴿وَمِنۡ ءَايَٰتِهِ ٱلۡجَوَارِ فِي ٱلۡبَحۡرِ كَٱلۡأَعۡلَٰمِ﴾ [الشورى : ٣٢]

"And of His portents are the ships, like mountains, on the sea." (42: 32).

In the above verse, 'jawaree' are ships, and 'a'lam' are mountains. The word is used here in the sense used by the poetess Al-Khansa' when she says, lamenting her deaced brother, Sakhr:

> "Verily, Sakhr was a pilot for guides, whom they followed;
>
> Similar to a mountain with a bonfire on its peak."

A mountain is called a landmark or a banner since it sticks out like a sign.

8. Medical plants and herbs grow on them; what grows on mountains does not grow on planes and deserts, while what grows in planes and deserts does not grow in mountains. In each, there are benefits and uses that no one but the Omniscient Creator can count.

9. Mountains can be used as a fortress to take refuge in against enemies, where the soldiers of Allah can feel safe from the aggression of the foes, in the same way as they hide in castles – they are often safer and more impregnable than many castles and walls.

10. One benefit is the one mentioned by the Almighty Allah in His Book, that He had made them as pegs of the earth, stabilizing it, and anchors, like the ships'. This is an extremely valuable benefit and they serve a precious function in that connection. If you regard them,

and reflect on their amazing creation from that aspect, you find that they perfectly serve the purpose they were created for. If they had been higher and more perpendicular like a wall, they would have been hard to climb and much of their benefit would have been missed. They would have blocked the way of the sun's light and air, which is harmful to humans. If, on the other hand, they had been spread out more on land, they would have occupied a wider area than is necessary for farms and dwelling; they would have filled the planes, and would not have provided shelters, caves and forts; they would not have softened the violence of winds, nor broken the rush of floods. If they were spherical, men would not have been able to climb them, and that would have wasted much of their benefit. From this, it is clear that the most useful and beneficial shape of mountains, the most adapted to serve the needs of humans, is the shape willed by Allah.

We find in the Qur'an verses which exhort us to contemplate the mountains and reflect upon their creation. Says the Almighty Allah:

﴿أَفَلَا يَنظُرُونَ إِلَى ٱلْإِبِلِ كَيْفَ خُلِقَتْ ○ وَإِلَى ٱلسَّمَآءِ كَيْفَ رُفِعَتْ ○ وَإِلَى ٱلْجِبَالِ كَيْفَ نُصِبَتْ﴾ [الغاشية : ١٧-١٩]

"Will they not regard the camels, how they are created? And the heaven, how it is raised? And the mountains, how they are set up?" (88: 17-19)

Their creation and benefits are a compelling proof of the power of their Maker and Originator, His Omniscience, Wisdom and Oneness. In addition, mountains glorify their Lord, hymn His praise, show humility to Him, split asunder and fall down for fear of Him.[2] It is they that feared their Lord and Maker, despite their firmness and great bulk, when He offered them the trust. There is the mountain on which Allah spoke to Moses, His addressee and confidant; the mountain to which the Lord revealed His glory, and it sank and crashed down; the mountain that had a liking for the Messenger of Allah ﷺ and his Companions, and the Prophet ﷺ and his Companions loved it[3]; the two hills, Al-Safa and Al-Marwah, appointed by Allah to be a reminder of His Prophet Abraham, and ordained that believers hasten between them as part of their pilgrimage rituals; the hill of Al-Rahmah (Mercy) rising on the hills of Arafah, where only Allah knows how many sins are forgiven, misdeeds overlooked, trespasses disregarded, requests realized, distresses removed, crises solved, favours renewed, happiness won, and wretchedness dispelled. Why not, when it is the hill privileged with receiving the grand congregation and noble delegation, coming from the farthest corners of the earth, standing in humility before their Lord's majesty, humble before His glory; in undistinguished, simple apparel, bare-headed, supplicating to Him to redress their trespasses, beseeching Him to render their requests. And He draws near to them, and speaks proudly of them to His angels. O Allâh! What hill and what mercy descends on it, what

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[2] In reference to the Qur'anic verse:

﴿ وَإِنَّ مِنَ ٱلْحِجَارَةِ لَمَا يَتَفَجَّرُ مِنْهُ ٱلْأَنْهَٰرُ ۚ وَإِنَّ مِنْهَا لَمَا يَشَّقَّقُ فَيَخْرُجُ مِنْهُ ٱلْمَآءُ ۚ وَإِنَّ مِنْهَا لَمَا يَهْبِطُ مِنْ خَشْيَةِ ٱللَّهِ ۗ وَمَا ٱللَّهُ بِغَٰفِلٍ عَمَّا تَعْمَلُونَ ﴾ [البقرة: ٧٤]

"For indeed there are rocks out of which rivers gush, and indeed there are rocks which split asunder so that water flows from them. And indeed there are rocks which fall down for the fear of Allah. Allah is not unaware of what you do." (2:, 74)

[3] I.e. The mountain of Uhud, as stated by the Messenger of Allah ﷺ with Uhud in view:

«هَذَا جَبَلٌ يُحِبُّنَا وَنُحِبُّهُ»

"That is a mountain that loves us and that we love." Reported by Al-Bukharee, Ahmad and Al-Tirmidhee.

great sins are forgiven upon it! There is also the mountain of the Cave of Hiraa, where the Messenger of Allah ﷺ used to seclude himself to pray, until the day Allah honoured him with the Message while he was in the cave. It is from that mountain that light shone to the whole of earth. It rises above all mountains in prestige, and for good reason. So glory be to Him Who privileged whatever He chose from among men as from among mountains. Some mountains have been designated to be like magnets to hearts, as if hearts have a relation to them. Those hearts are moved whenever the particular mountain is mentioned, and long to visit it; in the same way, certain men are privileged with Allah's grace, and favoured with His blessing, honoured with His love, in a way that He loves them, and so do His angels and His believing servants, and they are generally gladly received wherever they go. It is as expressed by a certain poet:

> "If you consider territories you will find
>
> That they, like men, can be miserable or happy."

Therefore, you would be well-advised not to extol a certain mountain or another because it is associated with a certain people. You do well to act upon the advice of a poet who said:

> "Take what you see; disregarding that which you have heard about;
>
> When the sun shines, you no longer need the light of Saturn."

Mountains realize that they will meet a day when they will explode resoundingly, turning to cotton wool with the ferocity of the blast, smashed in response to the majesty and glory of the Lord. They are the same mountains that their Creator and Lord described as subdued and submissive with the fear of Allah. How strange, then, that some people's hearts are harder than those mountains, hearts which hear the verses of Allah recited to them, and the Lord, glorified be His Name, mentioned to them, yet do not soften, nor submit, nor repent. It is no wonder, then, nor is it incompatible with His wisdom, that the Almighty Allah should expose those hearts to a fire that melts them, since they do not yield to His Words, the mention of His Name, or to admonitions and warnings. Let those whose hearts do not soften to Allah in this world, who do not repent to Him, do not melt with the love of Allâh and fear of Him, let them find some enjoyment for a while, until the day they face the Great Melter, when they reckon to the Knower of the Unseen and the Seen – then they will see and know.

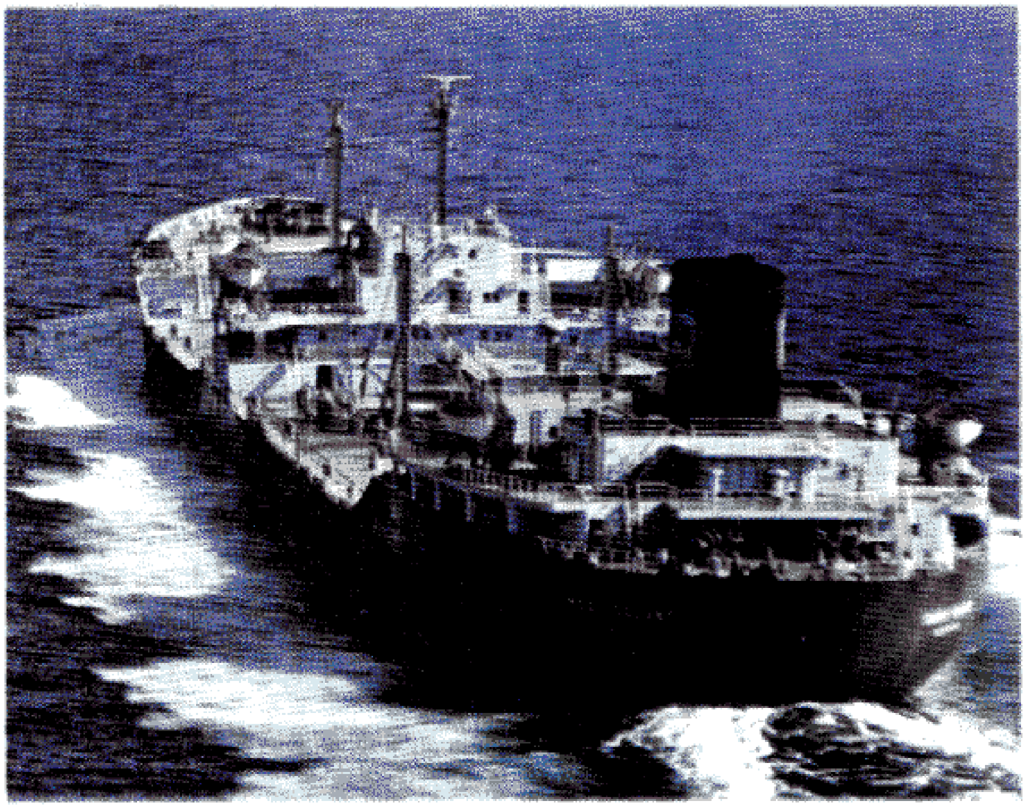

Figure "83"

With His Might, Allah causes enormous iron ships to float on water

The interior of the earth

Since the wisdom of the Lord Almighty willed that the earth, its planes, rugged lands, mountains and deserts, are all destined to give benefits of all sorts, to be the substance for creating diverse creatures, the earth is bound to have affinity with a mother that bears in her belly babies of every sort. It gives birth, for the benefit of men and animals, known or unknown to them, ejecting from inside it whatever its Lord allowed it to bring out; and at a later time to reclaim all that it had brought out. He willed that it be a provider for living things as long as they live on its surface, and then, once they die, to reclaim them and to fold them in its belly. It takes responsibility in this way of the living things while they live and after they die. And then, when the appointed day (i.e. Resurrection) has arrived, and the earth is heavy with conception, delivery is imminent, and the labour is due, its Lord and Creator commands it to bring out what is in its belly, to be unloaded of its burden; and so it puts out humans from its belly to its surface; then it says: "Here is what You entrusted to me, my Lord." It puts out, by the will of the Almighty, it's treasures, reveals its mysteries, and gives witness about its children, of the good deeds and bad deeds they had done.

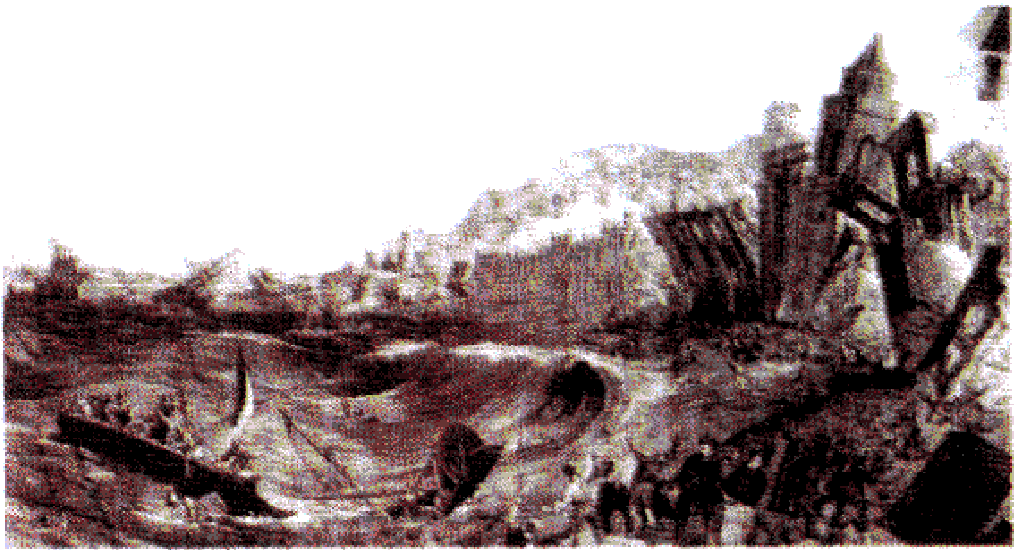

Figure "84"

The earthquake of 1755, which destroyed the city of Lisbon, the capital of Portugal. 60,000 people were killed, buildings were leveled and fires spread everywhere in the City.

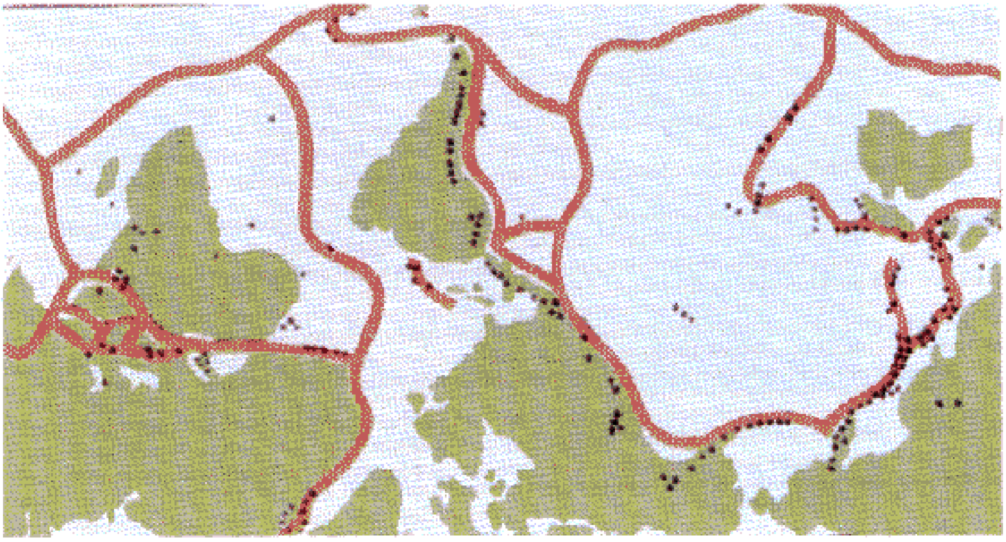

Figure "85"

The earthquake areas of the world according to the studies of Geographers. However, earthquakes only occur by the permission of the Lord, Allâh.

Earthquakes

Because winds blow around the earth, penetrate into its cavities, cause steams to be trapped in it and blow into it, without outlets, the Almighty willed that the earth occasionally 'breathe', resulting in violent earthquakes, which inspire His servants with fear and awe, driving them to repent and give up wrongdoing, supplicating to Him and penitent of their misdeeds. It is as an eminent believer of the earlier generations, sensing an earthquake, said: "Your Lord is reprimanding you." In the tenure of Umar bin Al-Khattab, there was an earthquake in Al-Madinah. So he gave a sermon exhorting people to be penitent; then he said: "If this happens again, I will not live with you in this town."

Air and the benefits of winds

Observe now air[4] and the benefits it has for living things. It is the essence of life; it sustains living things internally since they breathe it, and externally by protecting their bodies; it carries sound and delivers it to near and far places, acting as a messenger or herald whose job is to convey information and messages. Air is the bearer of odours in their diversity, conveying them from place to place, so that a human receives an odour realizing its source by noting the wind's direction, in the same way as air conveys sounds. It is the bearer of cold and heat which are essential for the survival of animals and plants. Observe also the functions of winds as they blow over land and sea, and the mercy or torture they foretell.

Consider how much the wind has served the clouds until they rained! There is first the 'raiser', the wind that raises the cloud, which suspends it between the earth and the sky. There is then the 'transporter', that transports the cloud, carrying it on its back the way a camel transports a water-bag. Another wind is 'the collector', the wind that gathers bits and pieces of cloud into a big mass. This is followed by the 'fertilizer' that acts in the way a male fertilizes a female, but it is with water that the wind fertilizes – without it, the cloud is dry, without water. The next wind is the 'driver', the wind that drives clouds wherever it is commanded to drive them, where they release their water. A different wind, the 'disperser', disperses the clouds, stretching them around the sky, so that when it rains, it does not pour the water in a mass; for if it does, it would destroy dwellings, plants and animals; so the 'disperser' is designed to keep clouds spread in a way that they rain in drops. There are winds that fertilize plants and trees, without which they would be barren; the winds that propel ships, without which ships would be immobile on the surface of the sea. Some other functions of the wind are that it cools water, helps people in kindling fire, and dries what people want to dry.

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[4] Scientists say that if air of the atmosphere were liquefied, it would cover the earth to a depth of approximately ten and a half metres.

On the whole, all that lives on earth, plants and animals, can survive only because of the winds. If Allah had not put them in the service of His servants, plants would wilt and animals would die; edible things would go bad, and pollution and rotting would be unbearable. Do you not see that when the wind subsides for long, great distress and affliction are flagrant, to a point that people do not survive if this condition lasts too long? If this happens animals will be sick, healthy people will no longer be healthy, and sick people's condition will deteriorate; fruits will go bad, plants will rot, and there will be contagion in the atmosphere. So glory be to Him Who made the blowing of wind a source of nourishment, mercy, blessing and a bounty from the Lord! It is as the Prophet ﷺ said of the wind that

«إِنَّهَا مِنْ رَوْحِ اللهِ تَأْتِي بِالرَّحْمَةِ»

"Verily, it is of the Mercy of Allah that heralds mercy."[1]

Note also a finer point about air in relation to sound, that sound results from the friction of bodies: it is not the friction itself, as some assume, but the outcome of friction once a certain object collides with another and then it moves away from it; so it results from collision and the following separation. Sound results from this, and air transmits it, delivering it to people's hearing, and this serves them in so many ways in their lives day and night. Very loud noises happen as a result of people's activities and dealings, so that if the sound that ensues from all of that were to stay in the air, there would be a great density of noises in the atmosphere, and the harm would be unbearable! People would have great difficulty trying to muffle the noises in the air to be able to hear badly needed sounds – in the same way as they wish used paper were blank to be used for useful writing. It is the mercy of the Most Mighty, the Wise, that willed that air should be like invisible paper that takes in as much voice as is needed, and then erases it with the will of the Lord, so that it becomes pure and blank, ready for receiving new information at all times.

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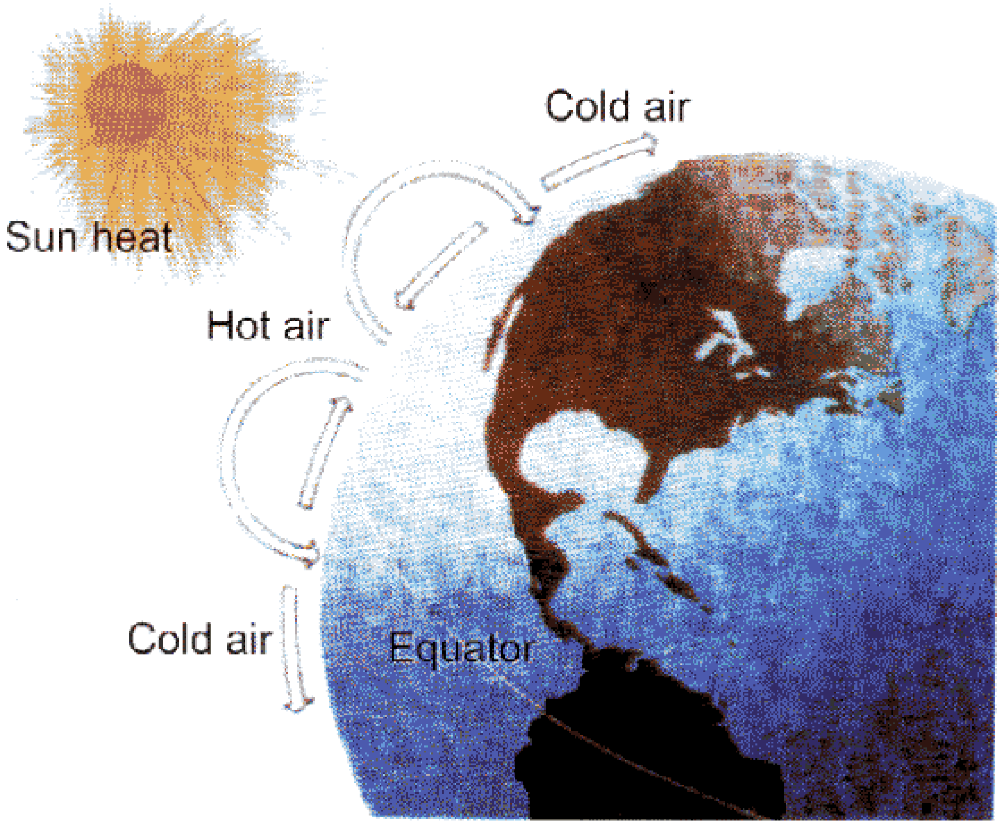
[1] Reported by Ibn Majah (2/ 1228), Abu Dawood (5075), Ahmad (2/ 268), Al-Shafi'ee in his Musnad (47) and Baihaqee in 'Shu'ab Al-Eeman' (4/315). Rated as 'fairly good' by Al-Albanee in his commentary on Al-Kalim Al-Tayyeb (No. 135).

The heat radiating from the sun heats the earth. In its Rotating, the earth heats the atmosphere that touches it. Then the hot air rises, replaced by cold air. This movement of the air is called the wind.



Movement of wind and air

Figure "86"

If the atmosphere were a little thinner than it is, some meteors that now burn by the millions in the atmosphere would hit all parts of the earth, at a speed of anything from six to forty miles per second. They would set on fire any combustible things.

The composition of Air

The air that we breathe consists of: oxygen, nitrogen, carbon dioxide, argon, neon, krypton and xenon.

Oxygen constitutes 21% of the atmosphere. Oxygen is a constituent of the compounds of which the earth crust consists; it constitutes 80 % of the world's waters; if that rate increases to 90%, for instance, many of the living things on the earth will burn; if it decreases to 10%, all creatures will die.

Carbon dioxide constitutes .0003 of the atmosphere; it is a heavy gas and requires a lot of hard work to be separated from oxygen. Plants can, however, with the assistance of sunlight, separate oxygen from carbon dioxide in a process that is called photosynthesis. In this process, a plant lets off oxygen into the air, and retains carbon, which it unites with the water hydrogen; this latter it will have absorbed through its roots. Later, with the grace of the Lord, it manufactures sugar, cellulose and other compounds that we see in the form of fruits, vegetables or flowers. So I ask you, in the name of God, who commanded it to perform all that?

Nitrogen constitutes 78% of the atmosphere. It is hard to dissolve, and in this way it puts a limit to the spread of oxygen. Without nitrogen, no food can form anywhere; it is essential for the nourishment of plants and animals, and of course man. Nitrogen is made available to plants in one of two ways:

1- With the help of bacteria in the ground and the plant: they take nitrogen from the atmosphere and transform it to one of the nitrogen compounds. After they die, they leave it dissolved in the ground.

2- Through thunder storms and lightning flashes: these cause nitrogen to unite with oxygen in the air, then it falls in the form of rain to dissolve in the ground. That is why rain water is the best for irrigating plants, since it contains the nitrogen that plants need.

Idle gases, like krypton, argon, neon and xenon.

Heat and cold

Regard also the outstanding mercy of cold and heat as vital things for the life of animals and plants! Observe how each displaces the other gradually and bit by bit until it completely dominates! If cold or heat were to displace each other in a sudden way, it would have been harmful and fatal for organisms and plants, the same as when a man comes out of an extremely hot bath to an extremely cold weather. The way heat and cold take place has no other reason but the care, wisdom and mercy of the Lord! If you say: The slow and slack way that heat and cold displace each other is a result of the sun's slow motion in ascending and descending, you will be asked: And what causes the slow motion of the sun? If you answer: The reason is the great distance between its rise and its setting, you will have to deal with the next question: And why this great distance? And so on.. You will have to answer question after question every time you give a cause until you end up with one of two attitudes: either stubborn denial and claiming that it is mere coincidence, without a controller or maker; or recognition of the Lord of the Worlds, a submission to the Eternal Fount of all being, a resolve to be among the sensible and thinking humans. There is no mid-way place between the two camps at all! So do not let your mind be deluded with the raving of atheists, as such delusions are for the one who knows, no more than the hallucination of devils and the fancies of deniers. When the dawn of guidance comes, and the sun of prophethood rises, the troops of those deluded are the first to take to their heels. Indeed Allah will bring to its fullest the glow of His light, in spite of the unbelievers.

The creation of fire

Reflect also on the creation of fire, how it is kept in waiting and how it is lighted. If it were ablaze all the time, like the continuity of water and air, it would burn the world; it would spread beyond conrol, and so much mischief and harm would result. If it remained a potentiality, never actually coming into existence, humans would miss many benefits that are realized because of the fire. The wisdom of the Most Mighty, the All Knowing, therefore, determined that fire should be potentially present in materials, that a human can bring it out whenever he needs, preserve it with fuel, like wood, and let it burn as long as he needs; when he no longer needs it, and ceases to supply it with fuel, it subsides with the will of its Lord, its Originator, which saves the trouble of its preservation and the harm of its continuity. So glory be to Him, who created it and put it in the control of humans in the most striking and admirable balance, combining enjoyment of its benefits, having control of it, and keeping secure from its dangers. Some of these meanings are referred to in the following verses from the Qur'an:

﴿أَفَرَءَيْتُمُ ٱلنَّارَ ٱلَّتِى تُورُونَ ○ ءَأَنتُمْ أَنشَأْتُمْ شَجَرَتَهَآ أَمْ نَحْنُ ٱلْمُنشِـُٔونَ ○ نَحْنُ جَعَلْنَٰهَا
تَذْكِرَةً وَمَتَٰعًا لِّلْمُقْوِينَ ○ فَسَبِّحْ بِٱسْمِ رَبِّكَ ٱلْعَظِيمِ﴾ [الواقعة: ٧١-٧٤]

"Have you observed the fire which you strike out; Was it you who made the tree thereof to grow, or were We the grower? We, even We, appointed it a memorial and a comfort for the dwellers in the wilderness. Therefore, praise the Name of your Lord, the Tremendous." (56: 71-74)

We praise our Lord, the Tremendous! He acquainted us with Himself, with His signs, guided us with His marvels, and saved us the need for guidance from mortals. He reminds us with the fire of this world of the fire of the Hereafter, so that we may take caution, beware of it and take refuge in Him from the Fire. He adds that the fire is a provision for 'muqween', that is travellers who take rest in an uninhabited land, where the need is keen for fire, for lighting, cooking, baking, warming, dispelling loneliness and other functions.

Notice the wisdom displayed in privileging man with the use of fire in preference to all animals! Apart from man, animals are not in need of fire. If man were to be without fire, the effects would be grave and very unfavourable in all matters of life and in his interests. Other animals, in contrast, have no use of fire, nor do they enjoy its services. To refer to just one of the many uses of fire, a use that is seemingly trivial, but is really vital in the life of human beings, let us notice the use of the lamp. This device is commonly used by people to perform any of the tasks they choose to perform at night. If they were deprived of this device, humans would have to spend half of their life as inactive as the dwellers of tombs. Who would be able to write, sew, perform a craft or do any activity in dark nights? How would an ill person behave at night? How would he manage without light to obtain medicine or to extract blood or to take any other action on his ailment? Consider the amount of light that is radiated by the tiny wick, how it lights quite a big circle around you, enabling you to see what is near and what is far! Consider, also, how if every creature of Allah's were to take a light from your light it would not weaken or grow fainter! As for the benefits of fire in cooking foods, preparing medicines, drying what is only usable after drying, analysing what has to be analysed, condensing what needs to be condensed and combined to make it useful; all these and many other uses are more than can be figured out.

Think again of the fire, how it naturally rises up! If the surrounding atmosphere did not check it, it would rise and rise; it is rather pulled down in the same way as a body that has weight is attracted down; and if, on the other hand, nothing checked its downward attraction it would go down and down. So who is it that arranged that the fire should rise to a determined level, and arranged that its descent should have a limit at the desired point? Who but the Most Mighty, the All-Knowing?

The rareness of gold and silver

Consider Allah's wisdom revealed in the rareness of the two precious metals, gold and silver; observe the failure of the best minds among humans to artificially produce these two metals, their utter inability to emulate Allâh's creation in this, despite their zeal and utmost endeavour to achieve this end. They only succeeded in producing imitations of the two metals. Had they succeeded in producing the identical gold and silver, great chaos would happen in the world, as gold and silver would be available to men in great abundance, until they become as cheap as palm leaves and pottery; in which case they would cease to serve the interest they are created to serve. Their ampleness would make them of little value, and they would no longer be used as the price for valuable property and goods, services and weaponry for fighters. Men would refuse to be employed, since everyone would be a possessor of gold and silver. If the Lord were to make all of His creatures rich, He would have virtually made them all poor, for who would let himself be employed in menial jobs which are absolutely essential for life? So glory be to Him who deemed that the rarity of gold and silver be a basis for establishing an organized system in the world! On the other hand, He did not make them as rare as red sulfur which is almost impossible to obtain, for in such little quantity they would be absolutely useless! He rather created them and laid them in such quantity as is deemed right by His judgement and mercy, for the convenience of His creatures.

I once read this description of an incident written by his eminence, Jibreel bin Rawh Al-Anbaree: "I was told by some precious-metal seekers that they once went quite far in searching for such metals along the paths of a certain mountain. They reached a spot where they came upon a mass of silver that seemed as big as a mountain. There intervened, however, between them and the silver a deep and wide river that they had no means of crossing. So they returned to fetch some device of crossing. Having found what they needed, they returned and looked for the way to the river, but they could not find any trace of it, and they had no means of choosing the right direction. So they returned, bearing their frustration." You see how precious-metal seekers will go to great lengths in looking for the precious metals, being unable to produce it in artificial methods. This is an evidence of the falsehood of chemistry, which on inspection will turn out to be mere fraud and hoax. Indeed, I wrote a treatise about chemistry in which I showed in forty ways that it is false and unfounded.* The point that we would like to emphasize here is that Divine wisdom willed that gold and silver should be rare and hard to find in comparison with iron, copper and lead; and this is for the benefit of humans. To drive this idea home we add that when an interesting and appealing thing is introduced among people to please them, it will be treasured and held valuable as long as it remains a rare thing. But as soon as it multiplies and becomes commonly available to people, common and noble, it loses its lustre in their eyes, and they lose interest in it.

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* **Editor's Notes :** The concept of chemistry referred to here by the Imam is not the study of elements, their structural make up and chemical composition. Rather, the Shaikh is refuting the idea that man can create anything he wishes by combining the proper elements and molecular structures through laboratory type procedures. Only Allâh is the Supreme Creator and man can never imitate Allâh's ability to create what He wills! A.W.

This is the reason for the aphorism that goes: "The preciousness of something is contingent on its scarcity." It is also for this reason that a scholar is least appreciated by his family and neighbours, and he is sought after most by those who are farthest away from him.

Availability of favours through Divine mercy

Think also of the marvelous wisdom embodied in the Lord's bringing within access of His servants what they most badly need, His compassion in fitting the availability and abundance of things to the extent they are needed. The more human beings need something, the more abundant it is; the less they demand it the less it is abundant; and when they need it in moderate amounts,it is available in moderate amounts – it would not in that case be too common nor too scarce. All depends on the extent and diversity of needs. Take for example the four essentials, earth, water, air and fire. See how commonly available they are. Observe the huge amount of air Allah has created, and how commonly available it is everywhere you go. That is because land animals cannot survive without it; and so it is accessible to animals wherever they happen to be, since they cannot do without it for a moment. Had it not been there in great quantities in all lands and territories, people and animals would suffocate because of smoke and vapour that keep forming and spreading. Observe, too, the wisdom of your Lord when He caused the wind to expel smoke and vapour; when they rise into the atmosphere, the wind carries them to where they are transformed to cloud or fog, and the world is rid of their nasty effects. You may well ask the denier who is it that managed things in this way and ordered everything most accurately? Can all human beings, if they work as a united group, transform smoke into clouds or fog, or can they blow them away from people where they would cease to be a source of danger to them? If your Lord so willed, He could have held the wind from blowing away smoke, and so it would become denser and denser on the surface of the earth, causing the demise of multitudes of humans and beasts.

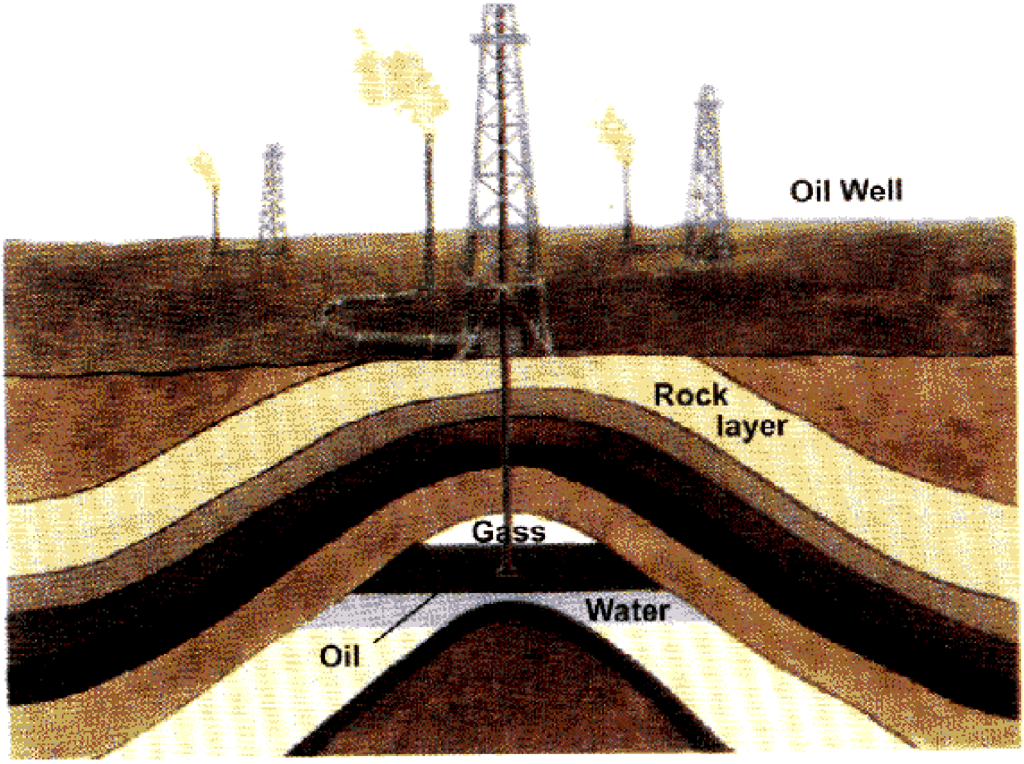

Oil Well
Rock layer
Gass
Water
Oil

Figure "87"

From their study of the layers of rocks under the earth, geologists learn about the places where coal, oil and natural gas may be found. Such fuels are called fossil, because they developed from the remains of living beings trapped between layers of rocks.

Geologists also investigate the nature and structure of rocks. They can distinguish rocks that contain useful minerals, such as iron, copper, diamond and uranium.

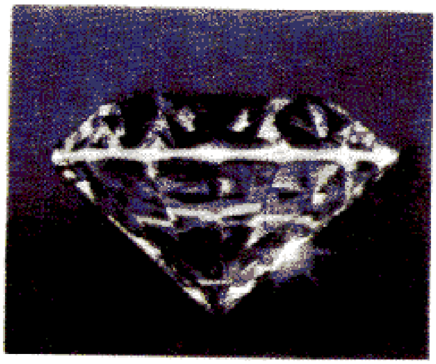
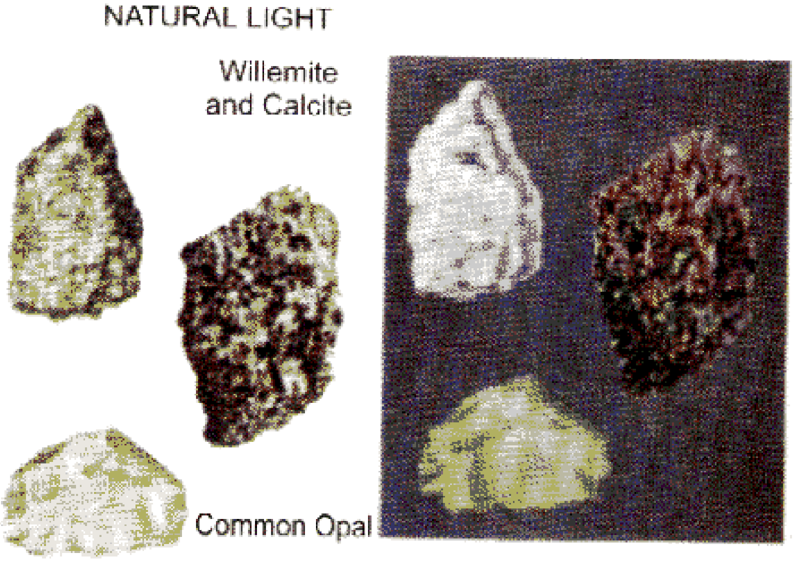


Figure "88"

A diamond

A few minerals are strongly magnetic. This is pyrrhotite, an ore of iron.


NATURAL LIGHT
Willemite
and Calcite
Common Opal

Some minerals emit beautiful colours under the rays of an ultra -violet lamp.

Figure "89"

Some minerals that the Almighty deposited in the earth for human use.

Tropical forests may exist where the rainfall is high and the temperature is high; deserts exist where the weather the weather is dry and hot; the tundra plains exist where the weather is cold and dry.

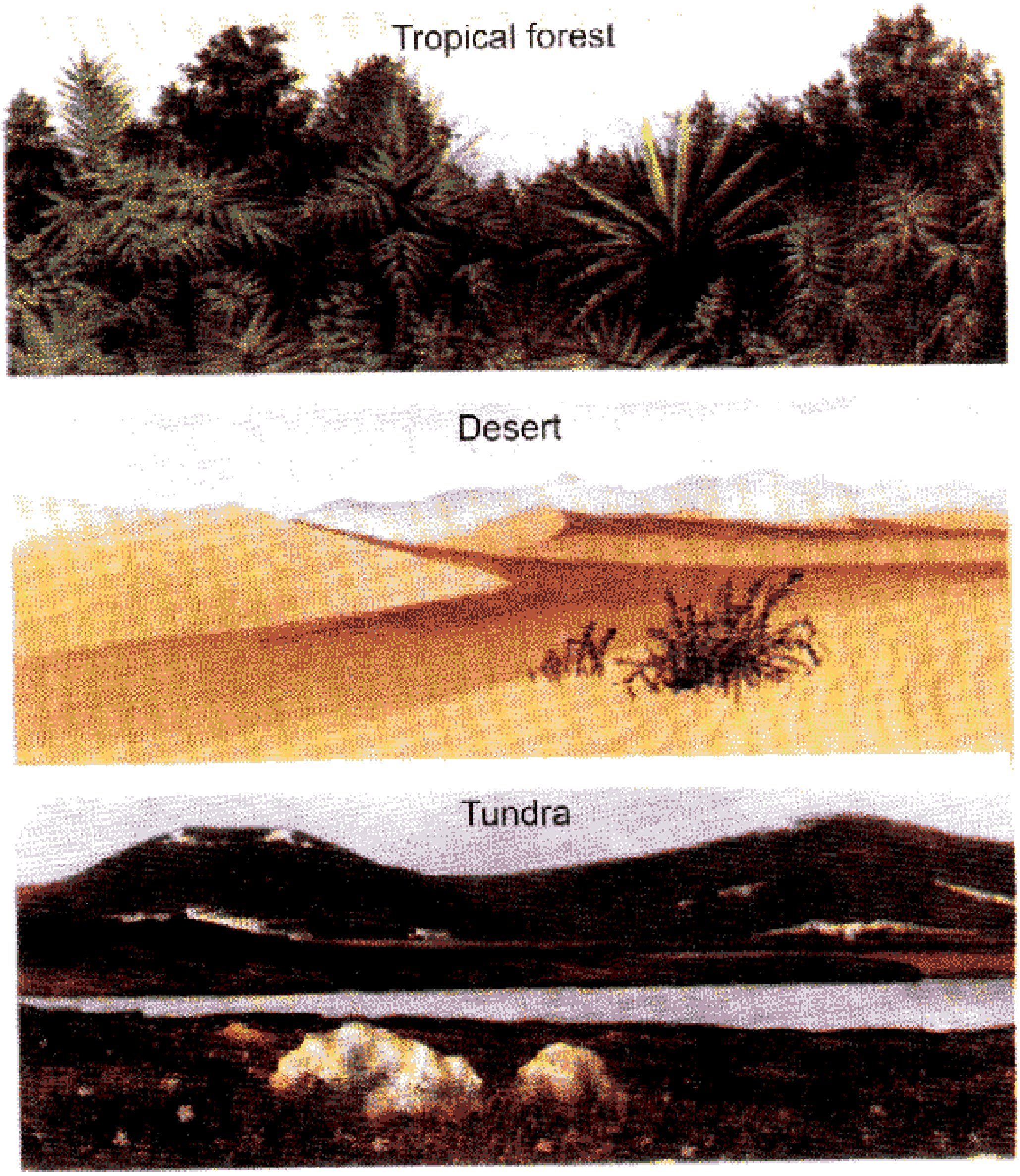

Tropical forest
Desert
Tundra

Figure "90"

The distribution of rain

Reflect on the exceeding wisdom witnessed in the falling of rain from above; how its precipitation extends to valleys and hills, mountains and planes, low lands and high lands. Had the Lord deemed that lands were to be watered from below, water would not reach high land until it had risen unduly in the low parts, which would cause much harm. It is for good reason that the Lord waters lands from above; He forms clouds, the irrigators of land, and sends winds that carry water from the sea, and then fertilise the clouds, in a way similar to a male impregnating a female. It is for this that lands adjoining the sea have a lot of rain, while those that are far from the sea have little rain. A certain poet has aptly described the clouds and their fertilisation in the following couplet:

> "They (i.e. clouds) drank sea water and then rose;
>
> Like great green waves speeding with a high hoot."

There is also, in relation to this, a tradition reported in Al-Muatta' (though it is one of the four traditions in Al-Muatta' with a break in the line of transmission):

«إِذَا نَشَأَتْ سَحَابَةٌ بَحْرِيَّةٌ ثُمَّ تَشَاءَمَتْ فَتِلْكَ عَيْنٌ غُدَيْقَةٌ»

"If a cloud rises from the sea then moves westward, it is a rain-replete cloud."[3] For Allah originates water in the clouds at a certain stage; sometimes by transforming air into water, at other times by causing air to carry water from the sea; then it fertilises the cloud, then it falls on the ground to fulfill the benefits mentioned above. If He had caused water to be driven from the sea as a stream running on the face of earth, the required watering would not have been realized without a lot of ruining of lands, and this watering would have not been comprehensive enough, not reaching the higher parts. Therefore, the Lord, in His infinite mercy, caused water to evaporate into the air, then, the Gentle and Powerful caused it to fall softly on the ground, in a way that overwhelms the minds of all the wise people.

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[3] Commenting on this tradition, Ibn Abdul-Barr says: Apart from Al-Muatta' , I have not seen this tradition except in Al-Shafi'ee's 'Al-Umm'.

Regard, too, the compelling wisdom of the rain's falling in the right amount. Once the ground has taken its need, and an excess of water would be harmful, it stops, and a clear sky follows. These two states, cloudy and clear sky, come to the world in succession of each other for its good. If one were to prevail, it would be to the ruining of life on earth; if rain fell continuously, it would cause the perishing of what is on earth; if it fell in excess of need, it would spoil grains and fruits, rot plants and vegetables, exhaust our bodies, and over-humidify air. Various diseases and ailments would spread, most foods would go bad, ways would be blocked. If, on the other hand, cloudlessness prevailed, bodies would dry; water would be scarce; springs, wells, and rivers would be without supply. Great damage would ensue, the air would be stifling; living things on the earth would dry, aridity would prevail. All this would cause various hard-to-cure diseases. It has been a blessing from the Gentle, the Wise, that He alternated clear sky with water in this world. In this way, balance is maintained, the air is healthy, rain and clear sky eliminate the adverse effects of each other, and, on the whole, this arrangement works for a better life on earth.

Greenery (Vegetation)

We read in the Noble Qur'an:

﴿ أَوَلَمۡ يَنظُرُواْ فِي مَلَكُوتِ ٱلسَّمَٰوَٰتِ وَٱلۡأَرۡضِ وَمَا خَلَقَ ٱللَّهُ مِن شَيۡءٖ ﴾

[الأعراف : ١٨٥]

"Have they not considered the dominion of the heavens and the earth, and what things Allah has created," (7: 185) And we read:

﴿۞ إِنَّ ٱللَّهَ فَالِقُ ٱلۡحَبِّ وَٱلنَّوَىٰۖ يُخۡرِجُ ٱلۡحَىَّ مِنَ ٱلۡمَيِّتِ وَمُخۡرِجُ ٱلۡمَيِّتِ مِنَ ٱلۡحَىِّۚ ذَٰلِكُمُ ٱللَّهُۖ
فَأَنَّىٰ تُؤۡفَكُونَ ○ فَالِقُ ٱلۡإِصۡبَاحِ وَجَعَلَ ٱلَّيۡلَ سَكَنٗا وَٱلشَّمۡسَ وَٱلۡقَمَرَ حُسۡبَانٗاۚ ذَٰلِكَ تَقۡدِيرُ
ٱلۡعَزِيزِ ٱلۡعَلِيمِ ○ وَهُوَ ٱلَّذِى جَعَلَ لَكُمُ ٱلنُّجُومَ لِتَهۡتَدُواْ بِهَا فِى ظُلُمَٰتِ ٱلۡبَرِّ وَٱلۡبَحۡرِۗ قَدۡ
فَصَّلۡنَا ٱلۡأٓيَٰتِ لِقَوۡمٖ يَعۡلَمُونَ ○ وَهُوَ ٱلَّذِىٓ أَنشَأَكُم مِّن نَّفۡسٖ وَٰحِدَةٖ فَمُسۡتَقَرّٞ وَمُسۡتَوۡدَعٞۗ
قَدۡ فَصَّلۡنَا ٱلۡأٓيَٰتِ لِقَوۡمٖ يَفۡقَهُونَ ○ وَهُوَ ٱلَّذِىٓ أَنزَلَ مِنَ ٱلسَّمَآءِ مَآءٗ فَأَخۡرَجۡنَا بِهِۦ نَبَاتَ
كُلِّ شَىۡءٖ فَأَخۡرَجۡنَا مِنۡهُ خَضِرٗا نُّخۡرِجُ مِنۡهُ حَبّٗا مُّتَرَاكِبٗا وَمِنَ ٱلنَّخۡلِ مِن طَلۡعِهَا قِنۡوَانٞ
دَانِيَةٞ وَجَنَّٰتٖ مِّنۡ أَعۡنَابٖ وَٱلزَّيۡتُونَ وَٱلرُّمَّانَ مُشۡتَبِهٗا وَغَيۡرَ مُتَشَٰبِهٍۗ ٱنظُرُوٓاْ إِلَىٰ ثَمَرِهِۦٓ إِذَآ
أَثۡمَرَ وَيَنۡعِهِۦٓۚ﴾ [الأنعام: ٩٥-٩٩]

"Lo! Allah it is who splits the grain of corn and the date-stone for sprouting. He brings forth the living from the dead, and is the bringer-forth of the dead from the living. Such is Allah. How then are you deluded away from the truth?

He is the cleaver of the Daybreak, and He has appointed the night for stillness, and the sun and the moon for reckoning. That is the measuring of the Mighty, the All-Knowing.

And He it is Who has set for you the stars that you may guide your course by them amid the darkness of the land and the sea. We have detailed our revelations for a people who have knowledge.

And He it is Who has produced you from a single being, and has given you a habitation and a reposity. We have detailed Our revelations for a people who have understanding.

He it is Who sends down water from the sky, and therewith We bring forth buds of every kind. We bring forth the green blade from which We bring forth the thick-clustered grain; and from the date-palm, from the pollen thereof, spring pendant bunches, and We bring forth gardens of grapes, and the olive and the pomegranate, alike and unlike. Look upon the fruit thereof, when they bear fruit, and upon the ripening, ..." (6: 95-99) [1]

In the above verses the Almighty is commanding us to watch plants at the time of the appearance and ripeness of fruits. The reference here is to the overwhelming marvel and extraordinary feat of bringing out fruits from among wood and leaves; and then the transformation of fruit from acridity, bitterness and sourness to the bright appealing colour and the sweet delicious taste; in this is a sign indeed for believers. It is in this spirit that one of our classic scholars said: It is the duty of people to go out to fields at the time of the ripeness and mellowness of fruit and vegetables to watch them. He recited, in support of his exhortation, the following verse from the Qur'an:

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[1] Mankind were for long ages ignorant of the formation of grains, fruits and vegetables; of even the structures of different parts of plants. Modern scientists, however, have striven to understand the way plants develop their seeds and fruits, in hope of emulating them, and producing food the way plants do! They endeavored long in that direction, aiming to disclose the hidden secrets of plants. In the end, they revealed what is now called photosynthesis: they discovered in the plants green micro-factories (green plastids), parts of the plant that give it its green colour. These micro-factories manufacture the nutrients that shape grains, fruits and vegetables, in fact all parts of the plant.

These green factories come into being at an early stage of the plant's development. The Plant, in turn, grows, supplied with water, from its seeds and roots. This growth is described effectively in a Qur'anic verse:

﴿ وَهُوَ ٱلَّذِىٓ أَنزَلَ مِنَ ٱلسَّمَآءِ مَآءً فَأَخْرَجْنَا بِهِۦ نَبَاتَ كُلِّ شَىْءٍ فَأَخْرَجْنَا مِنْهُ خَضِرًا
نُّخْرِجُ مِنْهُ حَبًّا مُّتَرَاكِبًا وَمِنَ ٱلنَّخْلِ مِن طَلْعِهَا قِنْوَانٌ دَانِيَةٌ وَجَنَّٰتٍ مِّنْ أَعْنَابٍ
وَٱلزَّيْتُونَ وَٱلرُّمَّانَ مُشْتَبِهًا وَغَيْرَ مُتَشَٰبِهٍ ٱنظُرُوٓا۟ إِلَىٰ ثَمَرِهِۦٓ إِذَآ أَثْمَرَ وَيَنْعِهِۦٓ إِنَّ فِى ذَٰلِكُمْ
لَءَايَٰتٍ لِّقَوْمٍ يُؤْمِنُونَ ﴾ [الأنعام: ٩٩]

"He it is Who sends down water from the sky, and threrewith We bring forth buds of every kind. We bring forth the green blade from which We bring forth the thick-clustered grain; and from the date-palm, from the pollen thereof, spring pendant bunches, and We bring forth gardens of grapes, and the olive and the pomegranate, alike and unlike. Look upon the fruit thereof, when they bear fruit, and upon the ripening, Lo! herein verily are portents for people who believe."(6: 99)

﴿ ٱنظُرُوٓا۟ إِلَىٰ ثَمَرِهِۦٓ إِذَآ أَثْمَرَ وَيَنْعِهِۦٓ . . . ﴾ [الأنعام: ٩٩]

"Look upon the fruit thereof, when they bear fruit, and upon the ripening, ..." (6: 99)

Indeed, it is beyond us, beyond all past and all future generations, to try to exhaust the significance of Allah's glaring signs in the universe that point to Allah, the only true God, who has no partner, and no one like Him, no one as great, perfect, appreciating, or gentle like Him; it is beyond us to just give justice to the tiniest fraction of all that. It does not follow, however, if such target is unattainable, that we should desist from pointing out some samples that alert man to what lies beyond. It is in that spirit that we embark on writing the following sections.

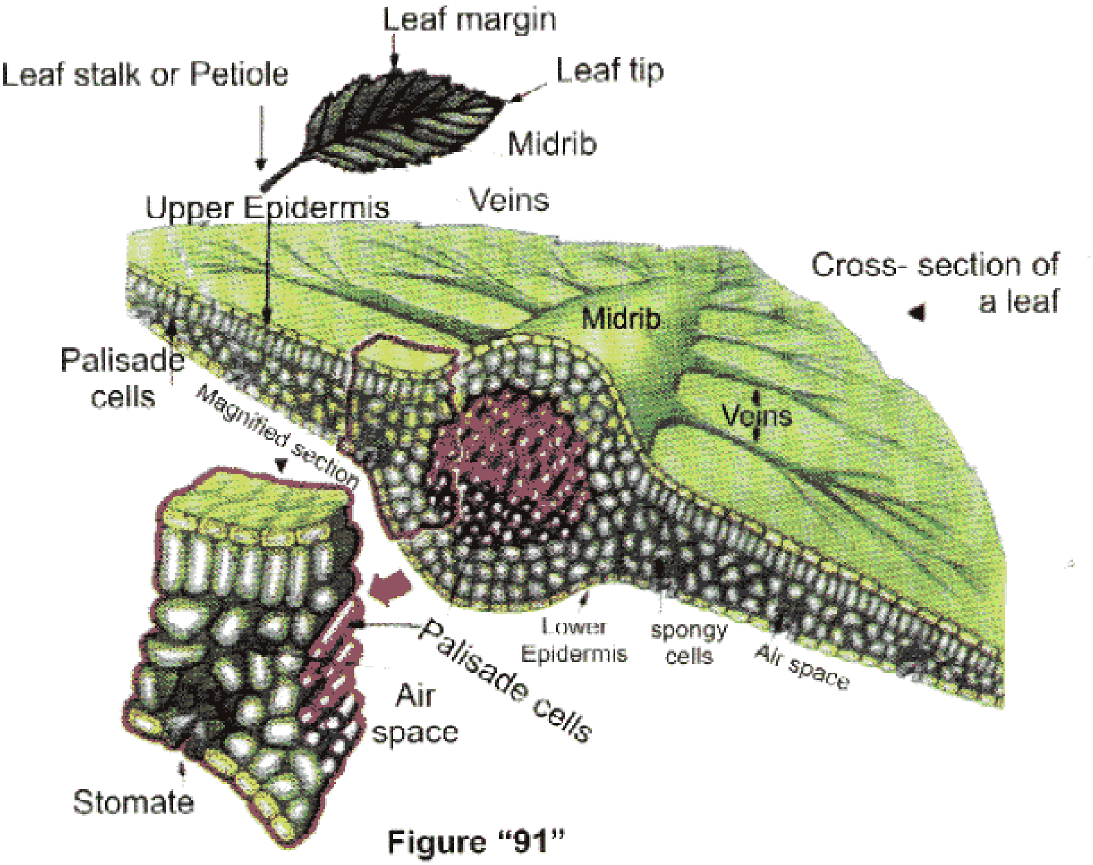
Leaf margin
Leaf stalk or Petiole
Leaf tip
Midrib
Upper Epidermis
Veins
Cross- section of a leaf
Midrib
Palisade cells
Magnified section
Veins
Lower Epidermis
spongy cells
Air space
Palisade cells
Air space
Stomate

Figure "91"

Structure of Leaf

The distribution of provisions and fruits

Reflect on the Divine mercy as revealed in the growing of provisions, vegetables, grains and fruit, gradually emerging in a slow succession! It is a blessing that they do not grow all at the same time, for if they were to grow like this on land, or if they did not grow on branches and stalks, much harm would take place, and many benefits that accrue from their emerging gradually would be missed. For each season and period requires fruits and plants that are not required in other seasons and periods; some period are hot, some cold, and some moderate; each season is so for the benefits of plants that are precisely adapted to it.

Benefits of crops and trees

Besides the above benefits, the Lord also invested crops with extra benefits, as noted in grains' husks, timber and wood, leaves, blossoms, palm leaves, palm branches, and other parts of crops; to say nothing of fodder and forage, supplies for building, ship building, saddles, utensils and so forth. Observe the benefits of blossoms and the picturesque sight that is ecstatic to watch; regard the spectacular form of trees, their magnificent shapes that are a strong reminder of the their Originator and Maker Whose handiwork reveals His utmost compassion and wisdom! The blossoms are a wonderful thing when you think of their budding on wood, and when you observe on the same wood the green leaves! They are followed by many fruits of all colours, types, forms, sizes, tastes, scents and benefits and functions! Reflect on all these being stored in that wood, the trunk and the twigs and branches before their emergence! The tree is like a mother to them, but where is the poor father who could bring forth the amazing forms, the perfect symmetry, the marvelous colours, the luscious tastes, the fragrant scents and the spectacular sight? You may well ask the denier: Who undertook to determine all that, to give it shape, to articulate it, and to develop it bit by bit? Who caused provision to come within reach, along delicate paths and subtle ways, hardly visible with the naked eye? Who, then, has control of all that? Who caused the sun to shine over all the living things, subdued the wind to their service, caused rain to fall on them, and protected them from ruin and harms?

The nourishment of plants [2]

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[2] For a long time all mankind did not know the factors behind the variation of plants, until modern sciences revealed that all plants consist of the same basic elements: carbon, oxygen, hydrogen, nitrogen, sulfur or phosphorus, and some trace elements. Their variation is caused by the variation in the amount each of the above elements contributes to the structure of the plant. It was further found that the root only absorbs from the ground exact and accurate amounts. We can find a support of this in the Divine Book, the Qur'an:

Consider the calculation of the Gentle, the All-knowing! Like people and animals, trees are in constant need of nourishment; unlike animals, however, they have no will and mouths, nor can they move to seek food. Therefore, their roots have been inserted in the earth, so that they absorb nutrients from the soil, and then pass them to their branches and boughs, which distribute the nutrients in their turn to leaves and fruit, each absorbing its allotted amount, never exceeding it. Nutritious matter and water are delivered to the various parts along paths and ways that are most precisely made, picking that matter from below, and transmitting it to branches, which take it in the way an animal takes its food with its mouth; then they distribute to each part what it needs; no part is denied anything of its due, nor does it exceed it.

Ask the denier, then: What gave plants that power? Who guided them to it, and enabled them to do it? Could all human beings, if they were to converge from the first man on earth to the last, and combine all their powers and skills, cause a single fruit to develop through an artificially devised way, through instruction or training? Is there any other explanation for all this but that it is the doing of Him, for Whom every creation gives evidence, and every miracle attests His sovereignty? It is indeed as is expressed in some couplets:

"It beats one how a denier,
disobeys the Lord or denies Him;
When in every movement
or rest there is a proof of Allah;
And in everything there is a sign
confirming that He is One."

﴿ وَأَنۢبَتۡنَا فِيهَا مِن كُلِّ شَيۡءٖ مَّوۡزُونٖ ﴾ [الحجر: ١٩]

"and We caused to grow therein of every thing justly weighed," (15: 19).

Translocation in plants

The transport of nutrients in plants is called translocation. Liquids move in vascular tissues, composed of xylem cells and phloem cells. Xylem cells transport water, with mineral salts dissolved in it , from roots to leaves; phloem cells transport nutrients from leaves to the various parts of the plant, each according to its need.

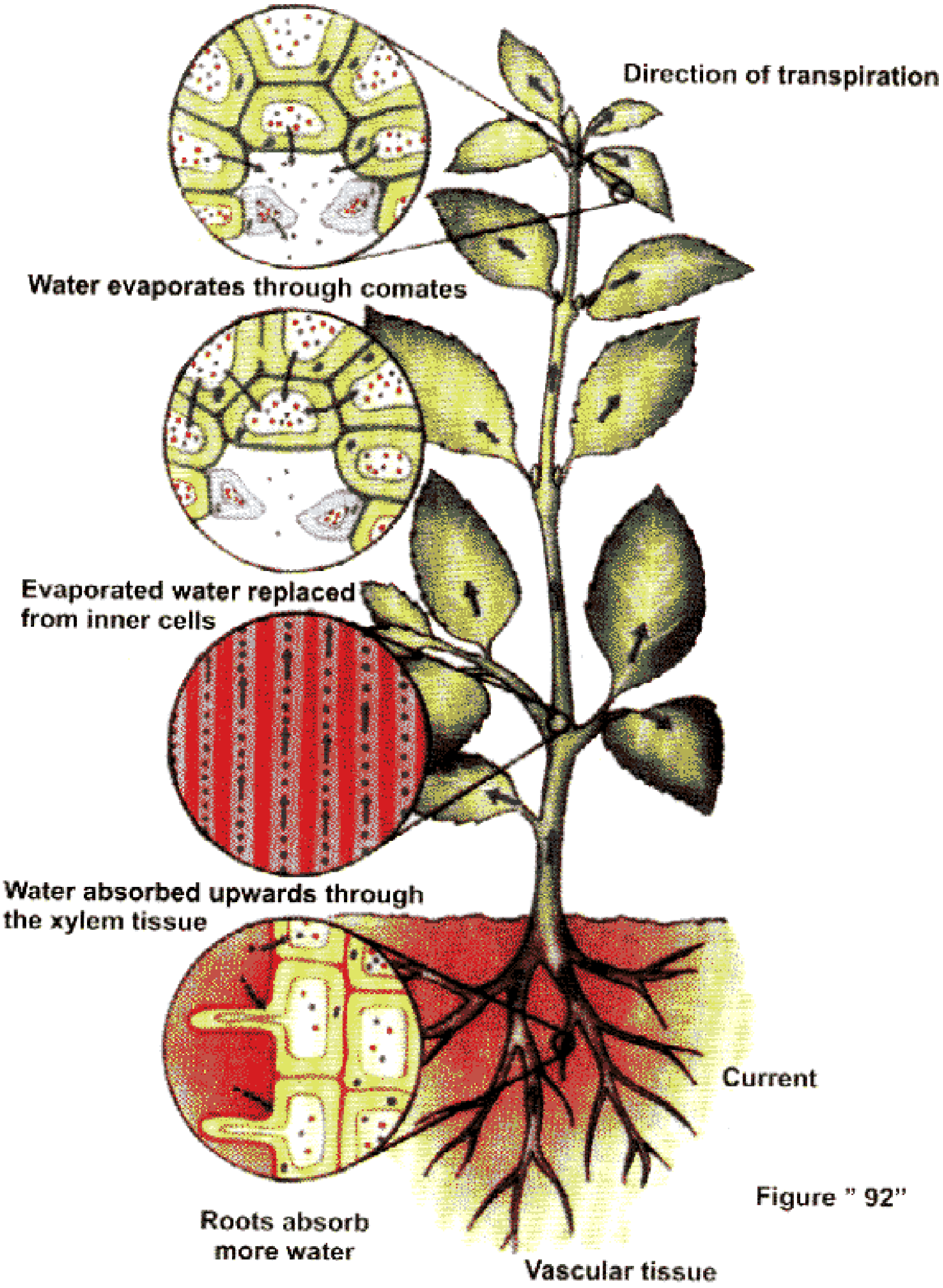
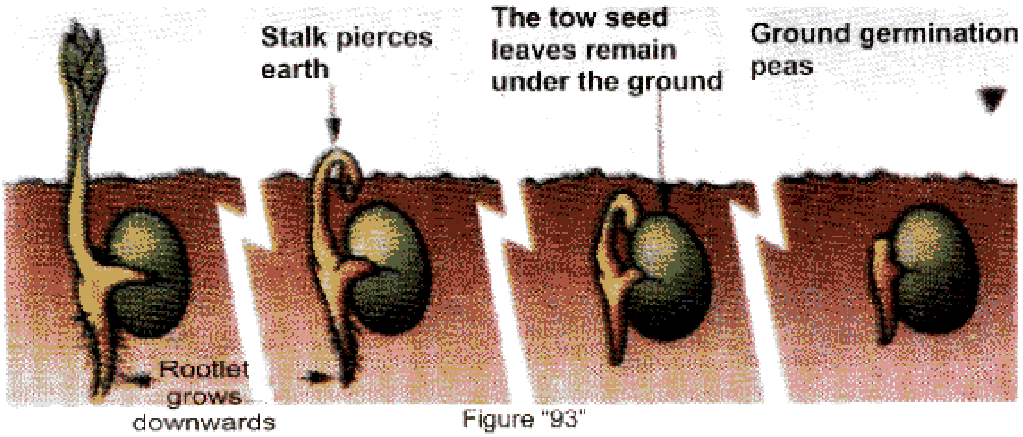

Direction of transpiration
Water evaporates through comates
Evaporated water replaced from inner cells
Water absorbed upwards through the xylem tissue
Current
Roots absorb more water
Vascular tissue

Figure " 92"

Roots of trees

Do you notice how when one puts up a tent or pavilion he fastens it with many pegs on every side, to keep it fast and to protect it from falling or leaning? In the same way, plants and trees have extensions spreading under the earth on every side, to steady them and hold them; and the more a tree's upper parts spread, the more its lower extensions spread in various directions! How else could those high-rising palm trees and lofty trees of many species remain firm in spite of the violent storms. Observe how this Divine precedent has provided humans with models: by watching trees and plants, they learn the building of tents and pavilions. Trees' subterranean extensions are like the pegs that stabilize tents; their branches and boughs are like a pavilion, and man has learnt to copy them.


Stalk pierces earth
The tow seed leaves remain under the ground
Ground germination peas
Rootlet grows downwards
Figure "93"

Germination of a seed into green leaves

Tree leaves

Reflect on the deep wisdom of creating tree leaves. You see in the single leaf veins that criss-cross on the whole of its surface in a way that bewilders an observer! Some veins are thick and line the leaf longwise and sidewise; and some are fine, weaving in between the thick ones, in a very intricate pattern. If humans were to emulate the network of even a single leaf, they would not complete the veins in a whole year; they would also need tools, skills and treatment that beat their means. Observe, then, how the Almighty grows, in a few days, leaves that cover the trees and bushes all over the earth, on both planes and mountains, without the need for support or assistance, without tools or treatment. It is evidently His power, operative on everything in the universe, and His ability that no barrier can obstruct.

It is indeed as Allah says in the Qur'an:

﴿ إِنَّمَآ أَمْرُهُۥٓ إِذَآ أَرَادَ شَيْـًٔا أَن يَقُولَ لَهُۥ كُن فَيَكُونُ ﴾ [يس : ٨٢]

"But His command, when He intends a thing, is only that he says unto it: Be! and it is." (36: 82)

Reflect, then, on the wisdom as revealed in those veins that spread all over the leaf, to provide it with water and nourishment, thus preserving its survival and bloom; in rather the same way as the veins in the human body deliver nutrients to each part of it! Observe how the thick veins give substance to the leaf, making it rigid and strong, protecting it from tearing and decaying! They perform the role performed by the nerves in the animal body; they are well-designed and carefully crafted and spread longwise and sidewise, giving it the required solidity, and protecting it from tearing.

The benefits of leaves

Think, also, of the wisdom of the Gentle, the All-knowing when He willed the leaves to be an adornment to trees, a covering and shelter to fruits, and a protection to them from any destruction that may interrupt their ripeness! It is for this reason that if a tree is stripped of its leaves, the fruit will decay and lose its appeal. Regard how the leaves protect a frail budding fruit from drying! After a tree is fruitless, the leaves still protect the weak twigs from heat. When it is cool, and sunlight is no longer harmful to boughs and twigs, the Lord strips the tree of its leaves, and leaves it bare, in preparation for clothing it again with a fresh, nicer apparel. So glory be to the Lord of the worlds Who knows the falling place and budding place of each and every leaf; no leaf grows, nor does it fall without His notice. If human beings realized, while watching those leaves in their variety and multiplicity, that they glorified the Lord, together with the fruit, twigs, branches and trees, they would discover aspects of their charm that they had not been aware of; they would perceive them with new senses, and would realize that they were created for a noble purpose, not in vain! Let's recite in this context the following verse from the Qur'an:

﴿وَٱلنَّجۡمُ وَٱلشَّجَرُ يَسۡجُدَانِ﴾ [الرحمن: ٦]

"And the herbs and the trees both bow in adoration," (55: 6).

In another place we read:

﴿وَإِن مِّن شَيۡءٍ إِلَّا يُسَبِّحُ بِحَمۡدِهِۦ وَلَٰكِن لَّا تَفۡقَهُونَ تَسۡبِيحَهُمۡۚ إِنَّهُۥ كَانَ حَلِيمًا غَفُورًا﴾

[الإسراء: ٤٤]

"and there is not a thing but hymns His praise; but you understand not their praise. Lo! He is ever forbearing, Forgiving," (17: 44).

I hope you are not of those whose heart is little-comprehending, who take 'tasbeeh' (in the Arabic text) to mean their pointing to their Creator and no more. Remember, then, that such understanding is refuted in more than thirty ways, as I showed at another place.[3] Is there any language in which direction to the Maker is called 'praise, adoration, prayer, turning unto the Lord, descending in fear', the terms used by Allah in His Book referring to His creation? Allah uses in describing creations terms like 'tasbeeh', (glorification) prostration and prayer, as you see in the following verse:

﴿ وَٱلطَّيْرُ صَٰٓفَّٰتٍۖ كُلٌّ قَدْ عَلِمَ صَلَاتَهُۥ وَتَسْبِيحَهُۥ . . . ﴾ [النور : ٤١]

"And the birds with wing outspread (in flight). Each one knows its own mode of prayer and praise." (24: 41)

Can it seem conceivable to your mind that the above verse means that Allah knew that the creatures mentioned pointed to Him, and that He called that pointing a prayer and 'tasbeeh', though He made a distinction between them, and joined them with the conjunction 'and'?

In another place in the Qur'an, the Lord describes creatures as echoing the hymns of praise , as we see in the following verse:

﴿ يَٰجِبَالُ أَوِّبِى مَعَهُۥ . . . ﴾ [سبأ : ١٠]

"O you hills, echo his (David's) psalms and praise!" (34: 10)

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[3] The reference is to an earlier place in the same book, not included in this book

In still another place He mentions that they perform 'tasbeeh, praise of the Lord at a particular time, at the break of the day, or at twilight. Is it conceivable here that they point to the Lord at that time and not at another? On the whole, the untenability of the above view is so manifest to people of vision that it is not in need of refutation. Praise be to Allah.

The creation of the stones of dates

Consider the wisdom involved in the stones and kernels placed inside the dates and other fruits! Have you thought of the many benefits and functions of the stones, which play a part similar to that of a skeleton to the animal's body, giving solidity to the body of the fruit; otherwise it would be flabby and tender. Without the stone, a fruit would split and rot, and would be quick to decay. A stone to the fruit is, as we said, like the skeleton to animals, and the fruit itself is like flesh clothed over bones, in animals. Stones are also useful for the preservation and reproduction of the species. In case the tree loses substance or decays, the Lord provided the stone, to be a substitute from which, if sown in the ground, a new tree may grow. Stones and seeds are also used as fodder for animals. Many materials, ointments, drugs, dyes and other things are made from them as people learn more about them; but the potential uses are even more! You ought to reflect long on the wisdom of the Lord's creation of the seeds and stones, which serve many functions; and He clothed them with the delicious pulp that man enjoys eating.

The skin of fruits

Think of the outstanding wisdom of the Lord when He provided the delicate, soft fruit, like the pomegranate, the chestnut and the hazel-nut with a skin that preserves it from rotting if exposed to the sun and air. As for the fruit which does not go bad if exposed, it is provided with a thin membrane at the beginning of its development, which preserves it when it is tender and unresisting to heat. After it has toughened, the membrane breaks up, and the fruit is allowed to be exposed to the sun's heat and to air, as is exemplified in dates and similar other fruits.

The creation of the pomegranate

Reflect also on the creation of the pomegranate, what wisdom and wonder it involves! You see inside the pomegranate a mass of fatty material lining it, surrounding the pulpy arils that are arranged in rows and organised layers, in a way that no human hand can emulate. The arils are divided into several compartments and smaller compartments; each enwrapped in a shell that envelopes it in the most exquisite, fascinating and appropriate way. They resemble nothing that men can accomplish, since they are the handiwork of Him Who said:

(كن فيكون)

" Be! and it is," (36: 82) You see how this solid, air-tight vessel envelopes all that it is designed to envelope to a perfection. Reflect on the fatty material that separates the arils, barring them from overflowing to each other, since if they did, they would get mixed up, and they would be one chaotic mass. As it is, the fatty stuff has been caused to flow among arils to provide them with nutrients; you see that the pulp of each aril has no access to other arils, but all are embedded in that fatty stuff. This situation contrasts with the grapes, which in place of the above arrangement, have a canal that reaches each single berry, nourishing it individually; in a way that no berry needs to trespass on the noursihment of the berry next to it. In the grape cluster, a main canal carries the sap along, then it branches into the many canulets of individual berries, so that sap is delivered to each and every berry. So glory be to the Best of Creators! See how He enwrapped all the arils in the pomegranate in strong wrappers to hold them together, so that they do not loosen or scatter, and then He covered those wrappers with a solid shell that shields the pomegranate and holds it firmly, fulfilling Allah's will to protect it. This is only a glimpse of the wisdom manifested in only one fruit. It is beyond us, and beyond anybody else, to exhaust the full wisdom, no matter how long we try, or how clever the investigator is. It is, however, enough to awaken a curious reader to what lies beyond, since a hint would suffice for such a person. As for the heedless, we find it apt to quote the following verse to describe their state:

﴿وَكَأَيِّن مِّنْ ءَايَةٍ فِي ٱلسَّمَٰوَٰتِ وَٱلْأَرْضِ يَمُرُّونَ عَلَيْهَا وَهُمْ عَنْهَا مُعْرِضُونَ﴾

[يوسف: ١٠٥]

"How many a portent is there in the heavens and the earth which they pass by with face averted!" (12: 105)

This means that they are heedless of the significance of what is around them.

The creation of seeds

Reflect on the fertility and production that Allah endowed crops with, so that from one grain seven hundred grains may grow. If a grain produced only one grain, there would not be produced enough to resow in the ground, to feed people, and for the farmer to save for himself until the next harvest. Instead, what is sown is from the surplus yield, and the farmer finds enough to feed himself, to feed others and to use for farming. This is also true of fruit trees and date-palm trees. A double plant, that grows from the same root, is an alternative way to let people cut one plant, and let the other replace what they have used for their various purposes. They do not run short of the particular plant. A farm-owner who is concerned for the prosperity of his lands would provide the peasants with what they need for sowing and what they need to live on until the ripeness of crops. It is for this that the Gentle, the All-Knowing grew from a single grain several grains, so that people can save what they can survive on, and sow the rest for the next season.

The creation of grains

Consider now the wisdom manifested in the creation of grains, wheat, barley, and the like. See how a grain is encased in a husk with a spear-sharp tip, thus repelling the flocks of birds from assailing and destroying it! If birds found the grains unsheathed and unprotected they would be sure to do great mischief, ruining the grains, spoiling them, causing havoc and devouring all they could; the farmers would be unable to deter them. This should lead one to realize the great mercy of the Gentle when He arranged that grains should have effective protection to keep them intact. Birds do pick up what they need for their nourishment, but the greater part remains for man, their rightful owner, since it is he who strove and drudged to grow them. Besides, he needs many times as much as birds do.

The right amount of trees' yield

Regard the great wisdom evident in the trees! See how they keep 'conceiving' and 'delivering' year in and year out! They are continually either 'conceiving' or 'delivering'! During the former phase the Lord decrees that a tree's natural heat is trapped inside, so that there should be conception at the destined time. The first phase is similar in the animal to the period of the formation of eggs and sperm in the human. The necessary processes are taking place inside in preparation for the time of fertilisation. At the time assigned for fertilisation and conception the tree seems to get ready and there is an increase in moisture inside, and this shows in the tenderness of its boughs. When its 'delivery' is due, it clothes itself in luxurious apparel, resplendent with blossom and leaves, and it seems to 'swagger, sway and swing', showing its pride over the barren tree. Once it has run its course, and its conception is visible to observers, its liberality or meanness is displayed. Its offspring will be nourished by the One Who nourished foetuses in their mothers' bellies. It is He Who clothes it with leaves, protecting it from cold and heat. Once the stage is completed, and the time for weaning is due, it will reach down with its boughs to the bypasser, as if it is inviting him to help himself to some of its fruit. As you approach it, you are met with the boughs, which seem to meet you attended by their children; they welcome you, and put their offspring forward to express their pleasure. A tree offers you its offspring, so liberally that it seems to hand them to you. This is especially true of the fruit-trees of Paradise, whose clusters are in easy reach. A believer dwelling there need just reach out to pick from his place, standing, sitting, or lying. Observe also the basils as they seem to greet you with their fragrance and breathe sweetly at your approach. In all this there is a display of courtesy and taking special care of you; there is an assertion of your prestigious place among creatures.

Does it become you, then, to be diverted by the blessings from the Blessor? To say nothing of using those blessings to disobey the Lord, and employ them in incurring His anger? To say nothing of denying the Lord, and ascribing His favours to another? This last attitude is described by the Almighty in the following words:

﴿ وَتَجْعَلُونَ رِزْقَكُمْ أَنَّكُمْ تُكَذِّبُونَ ﴾ [الواقعة : ٨٢]

"And make denial thereof your livelihood?" (56: 82)

It is incumbent on him who has sense to let his mind envision those blessings and bounties! Should he not review them again and again in hope of discerning the purpose of their existence? Why he has been created? What is expected of him? What is required of him, being endowed with those blessings? He should heed such verses of the Qur'an as the following:

﴿ فَاذْكُرُوا آلَاءَ اللَّهِ لَعَلَّكُمْ تُفْلِحُونَ . . . ﴾ [الأعراف : ٦٩]

"Remember all the bounties of your Lord, that happily you may be successful." (7: 69)

Reviewing the Almighty's blessings and bounties to His servant leads to the latter's success and happiness; such review cannot but lead the human to increase in his love, thankfulness and praise of the Lord; he will doubtlessly obey Him more, realise his own shortcoming more clearly, and his extreme shortcoming in doing what he should do. It is indeed as was well-expressed in the following couplet:

> "You have been prepared for a purpose which, were you but aware of it,
>
> You would not yield to following blindly the ignorant multitude."

Stages of the growth of bananas

1 . Banana blossom appears,

2 . Extends like an arm,

3 . Branches like fingers

Bending on wards under their weight

4 . Hangs down, ending in purple leaves

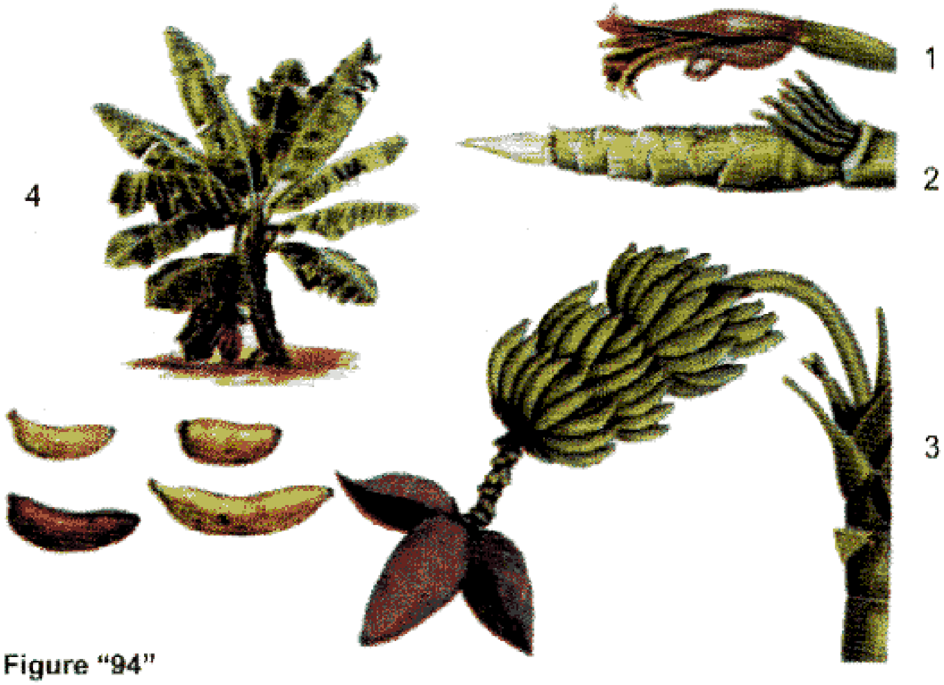

Figure "94"

The watermelon

Think of such plants as the gourd, the watermelon and the carrot: since Divine Wisdom willed that their fruit should be large in size, the plant crawls on the surface of the ground! If it grew erect in the way other plants grow, it would not be strong enough to bear the weight of the heavy fruit. The fruits' growth in that case would be stunted before they reached their full ripeness. Therefore, it was the wisdom of their Creator and Maker that He caused such plants to crawl on the ground, laying their fruit on the ground, which bears their weight. You see how the frail, thin stem stretches on the ground, with its fruits on both sides of it, resembling a female animal, surrounded by its cubs, sucking at its breasts. As for French beans, aubergines, broad beans and similar other plants which are firm enough to bear their fruits, the Lord willed that their stems stand erect, since they can endure the fruits' weight, and do not fall under their weight.

Diversity of fruit to fit the diversity of times

Reflect also on the depth of Divine Wisdom as revealed in the dispensing of fruit and vegetables at the right and appropriate times. They are made available to people when they most relish them! They welcome them as a thirsty person welcomes water; they help themselves to them delightedly and eagerly, as one receives a beloved traveller. If the summer's fruit were to come in the winter, it would arouse not little dislike and lack of appetite on the part of eaters; not to mention its harmful and sickening effect on bodies. In the same way, if the spring fruit were to grow in autumn, or the autumn fruit in spring, it would not have excited the pleasure it naturally excites; people would not find it tasty or luscious as they find timely fruits. You see how fruits that linger beyond their season are found unpalatable and unappetising. You should not think that this is no more than the power of habit; quite the contrary, habit has accepted this because it is the will of Providence that it is basically in accord with what is beneficial; it is the mercy of the Wise, the All-knowing!

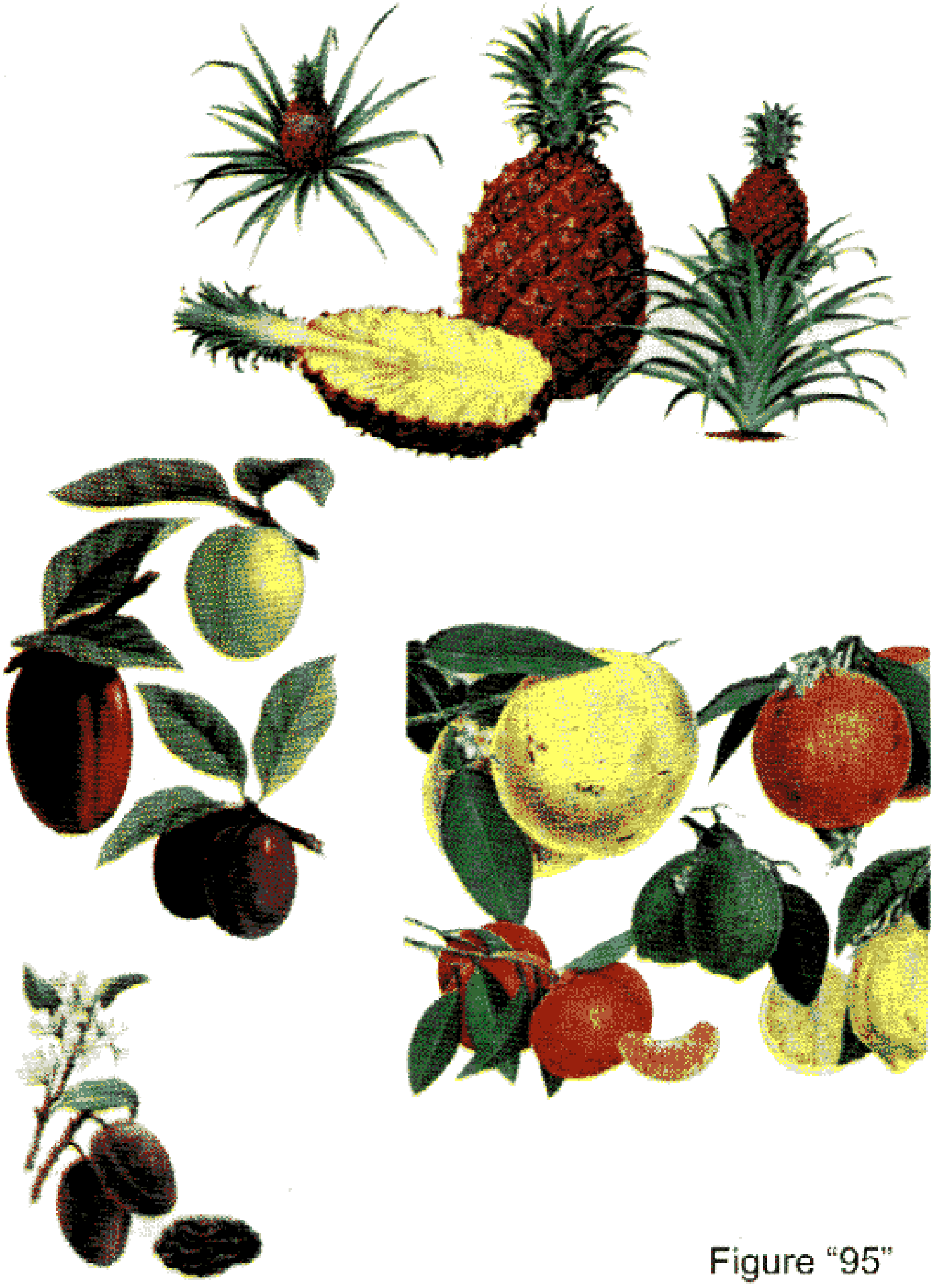

Figure "95"

The palm-tree

Observe the palm-tree, one of Allah's many signs, and you see so many wonders and miracles that you will be bewildered. As Allah willed there are female palm-trees, and there are male ones to fertilise them, in the same way as there are male and female animals. It is for this that this tree is the one tree that resembles man the most, especially a believer, as the Prophet ﷺ described it.[4] It deserved this affinity for many reasons:

First: The firmness and stability of its root in the ground, in contrast with the tree described as 'rootless from upon the earth, possessing no stability.'

Second: The lusciousness and sweetness of its fruit, and its general usefulness. In this, it is like the believer, who is decent of tongue, decent of behaviour, who does good for himself as well as for others.

Third: The permanence of its clothing and adornment; its green apparel adorns it summer and winter. In this, it is compared to the believer, who never takes off the raiment and adornment of restraint from evil and steadfast until the day he meets his Lord, the Almighty Allâh.

Fourth: Its accessibility and ease of picking its fruit; a picker seeking to pick up fruit from short palm-trees is not in need of a means of climbing; and as for tall ones, they are easy to climb in comparison with other tall trees of a different species. You can notice how a palm-tree has step-like parts that reach up to its top. In a like manner, a believer is simple and accessible to those who seek him, not conceited or arrogant.

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[4] Ibn Umar recounts: I was sitting in the presence of the Prophet ﷺ when he ate some palm-pith; then he said:

«إِنَّ مِنَ الشَّجَرِ كَالرَّجُلِ الْمُؤْمِنِ»

"There is a tree, which, among trees, resembles a believer." I (Ibn Umar) was about to say it was a palm-tree; but when I cast my eye at the people present there, I found that I was the youngest person. Then the Messenger of Allâh ﷺ said:
«هِيَ النَّخْلَةُ» "It is the palm-tree." (Reported by Al-Bukharee and Muslim.)

Fifth: Its fruit is one of the most beneficial in the world. It is enjoyable to eat it fresh as a sweet fruit; when it is dried, it is stored as provision, food and fruit; vinegar, syrup and sweets are made from it; it is a component of various medicines and drinks. The advantages of dates and grapes are superior in their diversity to that of any other fruits.

Sixth: The date-tree is the most resistant among trees to the violence of winds and adverse conditions. Many other great trees are sometimes swayed by winds, uprooted, or their branches snapped. Most do not resist lack of water like the palm-tree. A believer is similarly very patient against hardship, not easily shaken by ordeals.

Seventh: A palm-tree is beneficial in its entirety, so that nothing drops from it except that it is of advantage. Its fruit is beneficial; its trunk is useful for building, making roofs and so forth; its leaves are used for building roofs in place of canes, for closing up holes and cracks; its stalks are used for making containers, baskets and other vessels and mats etc.; its dried stalks and fibres are of such uses as is commonly known. It is for such considerations that some writers have established a direct correspondence between the above advantages and the qualities of a Muslim, so that for each feature of the palm-tree they mention a good quality in the Muslim. For instance, the thorns of the palm-tree are compared to the Muslim's firmness in dealing with Allah's enemies and sinful people; a Muslim is similar to the thorn in his strenuousness and coarseness against those people while he is compared to the sweet and mellow dates of a palm-tree in dealing with believers. This situation reminds one of a Qur'anic description of believers:

﴿أَشِدَّآءُ عَلَى ٱلْكُفَّارِ رُحَمَآءُ بَيْنَهُمْ ۖ . . .﴾ [الفتح: ٢٩]

"Hard against the disbelievers and merciful among themselves," (49: 29)

Eighth: The longer it survives, the more good it does, and the better its fruit. In this, also, it resembles a believer, whose longer life is a means to do more good and benevolent deeds.

Ninth: Its kernel is one of the sweetest and best; and so is the believer's heart one of the kindest.

Tenth: Its benefit never ceases; whenever one of its advantages falls back, others become active. Even during a year when it does not bear fruit, people find benefits in its leaves, stalks, fibres, and dried leaves. Here also, we find its affinity with the believer; he does not let a day pass without doing some good. If he stops doing one thing, he will be sure to be doing some other thing instead. His good is always accessible, while he is always free from mischief. He realizes the purport of a tradition of the Prophet ﷺ reported by Al-Tirmidhee:

«خَيْرُكُمْ مَنْ يُرْجَىٰ خَيْرُهُ وَيُؤْمَنُ شَرُّهُ، وَشَرُّكُمْ مَنْ لَا يُرْجَىٰ خَيْرُهُ وَلَا يُؤْمَنُ شَرُّهُ».

"The best among you is he whose good is expected, and whose mischief is not expected; the worst among you is he whose good is not expected, and whose mischief is likely to come."[5]

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[5] Reported by Al-Tirmidhee, rated as 'authentic' by Al-Albanee.

The above section has been a diversion, and I chose to put it in as an elaboration of the wisdom underlying the creation of the palm-tree and its formation, so that the reader may reflect on it.

Regard, then, the trunk of the palm-tree! Observe its structure! You will notice how some of its fibres extend lengthwise, as if it were stitches of fabric; while others extend crosswise, as though it were sinews of meat. It does all of this as if it were man-made stitching. In this way the palm-tree is sturdier and more durable; it can withstand the weight of heavy animals and resist the shaking of violent gales; it is strong enough to use in building roofs and bridges; in making vessels and other similar uses. The timber from the palm-tree, like that of other trees, is seen on inspection to be similar to fabric, not solid like the homogeneous stone. You can notice how parts of it extend lengthwise, and other parts crosswise, similar to the body's flesh where parts intertwine with other parts. This ensures the timber to be strong and better adapted to the purposes it was created for. If it were homogeneous like stone, it could not be used in the making of tools, doors, vessels, household objects, beds, coffins and so forth.

Figure "97"

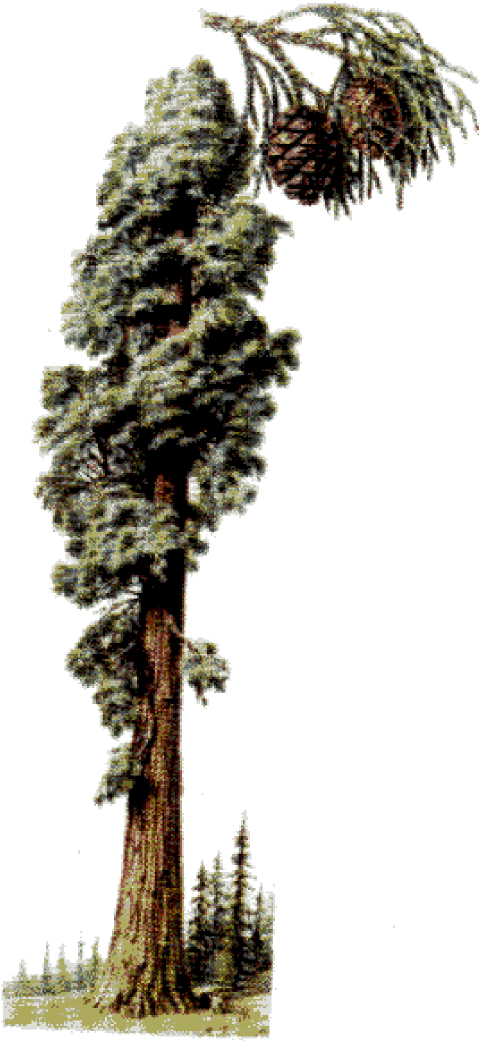
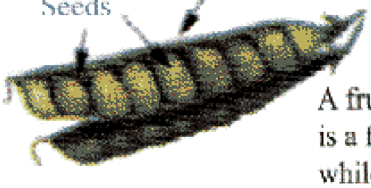
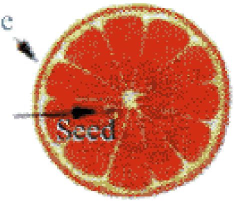


Figure "96"

Tree used for logging can be so big that a road can be cut through them for cars to pass, as the above picture shows. It depicts a sequoia tree, which can give enough boards for carpenters to make 300 three-room houses. Its height can reach 300 feet.

Kinds of fruits


A pod of peas
Seeds


Orange
Seed

A fruit contains seeds. The true fruit is a fruit that grows only from the ovary, while a false fruit (e.g. strawberry) may also grow from the receptacle. The outer skin of a fruit is called the pericarp. It is divided in some fruits into the epicarp, a fleshy part called the mesocarp, and an inner layer called the endocarp. Here are the main types of fruits:

The legume or pod: a fruit whose seeds are connected to its inner wall, and it releases its seeds by splitting open along two seams,

The berry: a pulpy fruit, such as the orange and the black currant, that contains several seeds,

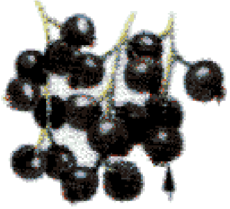
The nut: a dry fruit, such as the hazelnut and walnut, with a hard shell, containing only one seed,

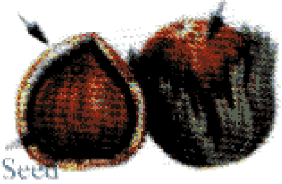
The cereal grain, also called the caryopsis or the kernel: a small fruit, such as wheat, whose wall is fused with the seeds's coat,

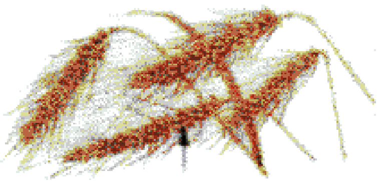
Achene: a small dry fruit, such as the maple and the buttercup, with just one seed. A winged achene, like the maple, is called 'samara' or a key fruit,

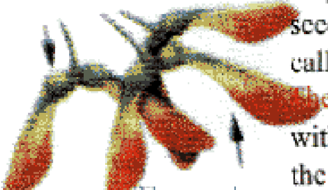
The drupe: a pulpy fruit, such as the peach, with a hard seed at it centre, usually called the pit,

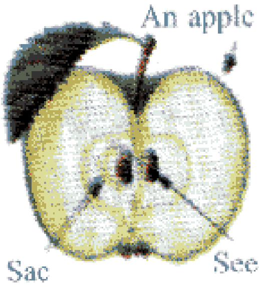
The pome: a fruit with a thick, fleshy outer pericarp and pulp. Its seeds are found inside a sac, e.g. the apple. The pome is an example of the false fruit.


Black currant


Shell
Hazelnut
Seed


Wheat cereal


Seed
The maple,
a samara


An apple
Sac
Seed

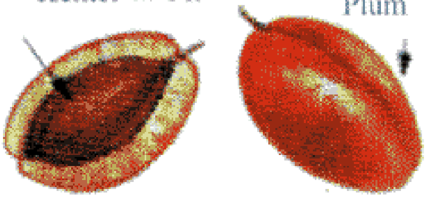

Kernel or Pit
Plum

Figure "98"

Which are more beneficial, dates or grapes?

People have long disagreed about which are better and more beneficial, dates or grapes! Al-Jâhidh has written a whole book debating the advantages of each, and he expatiated and dwelt on the issue; he listed the arguments of the two parties who supported one or the other. Then he concluded that palm-trees were better than grapes and more widely beneficial in their regions, like Al-Madinah, Al-Hijaz and Iraq; and grapes were better and more widely beneficial in their regions, as for instance in Syria, in mountains and in cold climates, where palm-trees could not be grown.

I was once present at a meeting attended by the most prominent celebrities in Makkah. This same issue was raised, and a certain man started expatiating upon the preference of palm-trees and their uses, then he added: "A conclusive argument in favour of dates is that we can exchange grapes for their stones; so how can a fruit that is obtainable for dates' stones be preferred to it?" Another person from among those present supported this point-of-view by saying: "The Prophet ﷺ has given his judgement concerning this issue; he made all debate unnecessary by prohibiting people from using the word 'al-karm' (a name for the grape-vine implying generosity and liberality) to designate grape vine trees, and he added:

«الْكَرْمُ: قَلْبُ الْمُؤْمِنِ»

" 'al-karm' is indeed a believer's heart." So what proof (in favour of the dates) can be more glaring than that?" And they continued to talk in that way. Then I addressed the first speaker; I said: "Your argument about the dates' stones being the price for grapes is not a proof, as there are reasons for their being so. One reason is that you need date stones for fodder, and the grapes' grower needs them to feed his water-drawing beast and loading animal. Another reason is that the grapes' seeds are of no use, nor are they normally collected. The third reason is that grapes are very little in your land, while there are lots of dates; therefore you have a lot of stones; and for that much of them you can buy some grapes. In countries where there is a predominance of grapes, the dates' stones are of no worth, and you can buy nothing with them.

To the one who used the Prophet's tradition in support I said: The tradition you quoted is in fact a proof that favours grapes, because people used to call the vine 'al-karm', in recognition of its many benefits and merits. It is eaten fresh and dried, sweet and sour; various drinks, sweets and syrup and other things are made from it. When the Prophet ﷺ told the companions that the designation 'al-karm' more appropriately described the believer's heart, he was pointing to the great deal of goodness, blessing, mercy, kindness, justice, charitableness, sound advice and all kinds of excellence and goodness that Allah ingrained in the believer's heart. A believer's heart has therefore a stronger claim to the designation 'al-karm' than the vine tree. It is not that the Prophet ﷺ meant that the vine tree did not have many benefits and functions, that the designation 'al-karm' is a misnomer, that it is a false usage, in the same way as it is false to use a 'scholar' to refer to an ignorant person, 'good-doer' to refer to a bad-doer, or 'generous' to refer to a mean person. Do you not notice how he refrained from denying the benefits of the vine tree? He merely said that a believer's heart was richer and more replete with goodness and blessing.

The above is more-or-less what took place during that meeting. Reflect on the Prophet ﷺ saying:

«الْكَرْمُ: قَلْبُ الْمُؤْمِنِ»

" 'Al-karm' is the believer's heart," and you will realize that it is analogous to his saying of the vine tree: "It is like the Muslim." He compared the palm tree to the Muslim in the tradition reported by Ibn Umar, and compared a Muslim to a vine tree in the other; in this latter tradition he forbade us to confine the designation 'al-karm' to the vine tree to the exclusion of a believer's heart. Some have suggested another interpretation, that he forbade us from calling a vine tree 'al-karm' (which denotes generosity and honouring), because the 'mother of vices'(i.e. alcohol) is made from it; that he loathed to hear the vine tree called with a name that encouraged people to use wine; that his purpose was one of 'eliminating the means of evil through word designations'. This argument would be acceptable, were it not for the other expression

«فَإِنَّ الْكَرْمَ قَلْبُ الْمُؤْمِنِ»

"because 'al-karm' is a believer's heart." This statement in fact specifies the reason of the prohibition; it points out that a believer's heart has a better claim to that designation than the vine tree. However, the Messenger ﷺ knew better his intent; whatever he meant to say is the truth.

On the whole, the Almighty Allah listed to His servants the fruits of the vine tree and the palm tree as two of His bounties and blessings to them. This supports the first view, that 'al-karm' should not be the designation of only the vine tree. Against the other interpretation there is the argument that 'the mother of vices' (i.e. alcohol) is extracted from various fruits, including dates. This is supported with the following verse from the Qur'an:

﴿ وَمِن ثَمَرَٰتِ ٱلنَّخِيلِ وَٱلْأَعْنَـٰبِ تَتَّخِذُونَ مِنْهُ سَكَرًا وَرِزْقًا حَسَنًا ﴾ [النحل : ٦٧]

"And of the fruits of the date-palm, and the grapes, whence you derive strong drink and also good nourishment." (16: 67)

A tradition of the Prophet ﷺ is also relevant here. Anas bin Malik, the Prophet's Companion, stated: "When alcoholic drinks were prohibited, there was no grape drink in Al-Madinah at all; people used only dates' juice." One may conclude, then, that if the Prophet ﷺ forbidding the usage of 'al-karm' to designate the vine tree was for its use in the brewing of alcohol, he would not have compared the palm-tree to the believer, since alcoholic drink is also made from its fruit. But Allah knows best.

Timber

It is also a splendid fact that timber is made to float on water; it is indeed for great wisdom. Without that, ships would not be able to transport mountain-like heaps of loads and goods, sailing with them to and for across the sea; such burdens would have been a great trouble to transport by land, and people would have missed many of their interests!

Desert plants

You may wonder about the wisdom of the many plants one encounters everywhere in the desert and wilderness and mountains where no human inhabitants or dwellers can benefit from them. It may occur to you that they are a worthless addition of no value or benefit at all. But this only reflects on the amount of your knowledge and comprehension. Many aspects of wisdom and benefit has the Lord willed when creating those crops. Lots of beasts, birds and insects feed on them! Some living above the earth and some below its surface! Such plants are a kind of feast that Allah has set for those birds and animals, from which they eat, and the rest is left, in the same way as a wealthy host lets his guest eat, and much of the food remains after the feast, since the host is wealthy, hospitable and generous!

Medicines

Think of medicines and remedies that the Lord grows from the earth; think of their distinctive characteristics, and their diverse benefits and uses! One penetrates to joints, extracting heavy wastes which could be fatal if ignored; one gets to and removes black bile; one removes yellow bile; one eases swellings; one soothes irritation and worries; one causes sleep and recovers it after spells of sleeplessness; one relieves the body from the feeling of heaviness; one cheers up the heart if it is too much burdened with depression; one eliminates and removes phlegm; one sharpens vision; one purifies the mouth's flavour; one lessens erotic desire; one excites it; one cools temperature; one defeats cold and raises temperature; one counters the bad effects of other medicines and foods; one modifies the effect of other medicines and balances it off, so that their effect on the body is a moderate one; one quenches thirst; one eliminates pernicious wind and dismisses it; one gives a person a bright and fresh colour; one increases weight in certain parts of the body; one decreases it; one coats the stomach with a layer; one cleanses and purifies it; and the list can go on and on; it is hard for humans to make a repertory of all medicines.

You may well ask the denier: Who is it that provided those plants, herbs, grains and roots with their diverse characteristics and powers? Who provided each with its peculiar quality? Who guided human beings, and even animals, to take what is good and to avoid what is harmful? Who alerted humans, and even the ignorant beasts to them? What understanding, and what experiment led them to know all that? What makes them realize what those things were created for? Who, let the misguided think, but Him Who gave unto everything its nature, and then guided it aright? Even if one supposes that man was awakened to those characteristics through his intellect, experi- mentation, reflection and observation, it remains to ask Who guided the beast to many characteristics that even human beings do not realise; in such a way that some of those beasts use the particular medicines until they are healed? Who is it that guided the animal to seek that particular plant and no other? It has been observed that some birds take in sea water in their bodies when they suffer from retention, and this enables them to pass the waste; that some birds take a certain plant when they are ill, and this heals them. One may refer to wondrous instances in this respect as reported in compilations by physicians! So again you may ask the denier: Who inspired them to do that? Who guided them? Who taught them? Is it conceivable that such things take place without a Controller, without the management of the Most Mighty, the Wise, and the determination of the Omniscient, the Compassionate, the All-Knowing, Whose wisdom overwhelms and baffles the intellect, Who compels the innate nature (fitrah) of a human to testify to His truth, reflecting what had been ingrained in it by Him, identifying Him as Allah, beside Whom there is no god, the Creator, the Shaper out of naught, beside Whom no one should be worshipped? That if there were another god beside Him in the heavens or the earth they would have been disordered, and the system in the heavens and the earth would run wild! Exalted is the Almighty above what the wrongdoers and deniers say, High Exalted!

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